DESCRIPTION OF PROPOSED CHANGES NPF-10-99 AND NPF-15-99
AND SAFETY ANALYSIS

This is a request to revise Technical Specification 3/4.3.2 ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION.

Existing Specifications

Unit 2: See Attachment "A"

Unit 3: See Attachment "C"

Proposed Specifications

Unit 2: See Attachment "B"

Unit 3: See Attachment "D"

Description

The proposed change is requested to clarify the Technical Specification requirements relating radiation monitors which support the containment purge isolation ESFAS function to improve consistency with the FSAR and Standard Technical Specifications (STS).

In conjunction with other proposed changes, this change also reflects the addition of the dedicated purge effluent monitors required by San Onofre Nuclear Generating Station (SONGS) Units 2 and 3 License Conditions 2C(17) and 2C(15), respectively.

From the radiation monitoring standpoint, Standard Technical Specifications are functionally organized with separate specifications, operability requirements and actions for each monitoring function. The functional organization of the STS assumes that there are individual monitors to serve each function. When a given monitor serves more than one of the STS functions, as is the case at SONGS Units 2 and 3, the cross referencing of individual specification requirements tends to confuse and often makes the individual functionally related requirements overly restrictive. A review of the FSAR, Responses to TMI Action Plan, the Safety Evaluation Report, and related correspondence was conducted to determine which monitors have been credited to serve specific STS functions. As result of this review the following revisions are proposed:

1. Table 3.3-3, Item 12.b, Containment Airborne Monitors is revised to reflect FSAR credited functions. The primary function of the Containment Airborne Radiation Monitors (RT-7804-1 and RT-7807-2) is to actuate containment purge isolation in the event of a fuel handling accident in MODE 6 (FSAR Sections 7.3.1.1.5 and 11.5.2.1.4.5). In addition, the gaseous and particulate channels are credited with serving a reactor coolant system leak detection function required in MODES 1-4 by Specification 3/4.4.5 (FSAR Section 11.5.2.1.4.5). The proposed change

revises the applicability and ACTIONs to be consistent with the STS and appropriate for these functions. Prior to first refueling, containment airborne monitor, RT-7804-1, additionally serves the containment purge effluent monitoring function required by Specification 3.3.3.9. This function is reflected in Specification 3.3.3.9, Radioactive Gaseous Effluent Monitoring Instrumentation.

2. Table 3.3-3, Item 12.c, Containment Area Radiation, is revised to reflect FSAR credited function. The primary function of the containment area radiation monitors, RT-7856-1 and RT-7857-2, are to initiate containment purge isolation in the event of a fuel handling accident in MODE 6 or a small break LOCA in MODES 1-4 (FSAR Sections 7.3.1.1.5 and 12.3.4.3.1). These monitors are also credited with satisfying the NUREG-0737 Item II.E.4.2 requirement to isolate containment purge valves on a containment high radiation signal. The proposed change revises the applicability and ACTIONs and surveillance requirements to be consistent with Standard Technical Specifications, and to reflect these functions.

3. Table 3.3-4, Engineered Safety Feature Actuation System Instrumentation Trip Setpoints, Item 12.b, Airborne Radiation, and Item 12.c, Containment Area Radiation are revised to reflect the containment airborne and area monitors' ESFAS functions. As noted above, Containment Airborne Monitor RT 7804-1 currently satisfies the purge effluent monitoring requirements of Specification 3.3.3.9. Accordingly, the setpoints for this monitor are currently specified by the Offsite Dose Calculation Manual (ODCM). Prior to startup following the first refueling, Units 2 and 3 License Conditions 2.C(17) and 2.C(15), respectively, each require installation of a dedicated purge effluent monitor for their respective unit. On completion of these design changes, the containment airborne monitors will no longer serve the purge effluent monitoring function and it will no longer be appropriate to specify their setpoints in accordance with the ODCM. The proposed change requires that the setpoints be sufficiently high to prevent spurious alarms/trips but low enough to assure alarm/trip on an inadvertant release. This is consistent with the intent of the STS requirements for establishing setpoints.

   Two setpoints are specified for Item 12.c, the Containment Area Monitors. These setpoints correspond to the two functions noted above. The MODE 1-4 setpoint is consolidated from Specification 3.3.3.1, Radiation Alarm Monitoring Instrumentation. The 340 mR/hr allowable value results from the addition of a 5% of the setpoint allowance to account for needle width of this instrument's analog indicator. This is consistent with the practice used to establish the allowable values from trip setpoints of other radiation monitors with analog indicators in Table 3.3-4.

SAFETY ANALYSIS

The proposed change discussed above shall be deemed to involve a significant hazards consideration if there is a positive finding in any one of the following areas:

1. Will operation of the facility in accordance with this proposed change involve a significant increase in the probability or consequences of any accident previously evaluated.

   Response: No

   The function of containment purge isolation is to mitigate the radiological consequences of an in-containment fuel handling accident in MODE 6 and small break LOCA in MODES 1-4. The proposed change leaves this function intact. With the exception of the fuel handling accident noted above, no other previously analyzed accidents including the small break LOCA take credit for CPIS to mitigate the offsite dose consequences. However, as noted above, the radiation monitors which support CPIS are also credited in the FSAR with the performance of other non ESFAS functions. The proposed change is consistent with these other functions. However, from the standpoint of effects on the probability or consequences of previously evaluated accidents, no credit is taken for these other functions to mitigate the consequences of any FSAR Chapter 15 Accident Analysis other than the fuel handling accident as noted above. Therefore, the proposed change does not increase the probability or consequences of any previously evaluated accident.

2. Will operation of the facility in accordance with this proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

   Response: No

   The proposed change clarifies the technical specification requirements for radiation monitoring instrumentation associated with containment purge isolation to be consistent with the FSAR. The proposed change does not affect the configuration or operation of the plant. It therefore does not create the possibility of a new or different kind of accident from any previously evaluated.

3. Will operation of the facility in accordance with the proposed change involve a significant reduction in a margin of safety?

   Response: No

   The proposed change involves only a clarification of the technical specification requirements for radiation monitoring instrumentation associated with containment purge isolation. As noted above, the proposed change maintains requirements for this function consistent with the FSAR. Because the requirements remain the same as analyzed, no margin of safety is reduced by the proposed change.

The proposed clarification of containment purge isolation radiation monitoring requirements is similar to example (i) of amendments not likely to involve a significant hazards consideration published in 48 FR 14864 dated April 6, 1983 in that it is essentially administrative in nature.

SAFETY AND SIGNIFICANT HAZARDS DETERMINATION

Based on the above Safety Analysis, it is concluded that: (1) the proposed change does not constitute a significant hazards consideration as defined by 10 CFR 50.92; and (2) there is reasonable assurance that the health and safety of the public will not be endangered by the proposed change; and (3) this action will not result in a condition which significantly alters the impact of the station on the environment as described in the NRC Final Environmental Statement.

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ATTACHMENT "A"

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
11. FUEL HANDLING ISOLATION (FHIS)					
a. Manual (Trip Buttons)	2	1	1	**	16*//
b. Airborne Radiation					
i. Gaseous	2	1	1	**	16*//
ii. Particulate/Iodine	2	1	1	**	16*//
c. Automatic Actuation Logic	1/train	1	1	**	16*//
12. CONTAINMENT PURGE ISOLATION (CPIS)					
a. Manual (Trip Buttons)	2	1	1	6	17*//
b. Airborne Radiation					
i. Gaseous	2	1	1	All	17, 17a, 17b
ii. Particulate	2	1	1	All	17, 17a, 17b
iii. Iodine	2	1	1	All	17, 17b
c. Containment Area Radiation (Gamma)	2	1	1	6	17*//
d. Automatic Actuation Logic	1/train	1	1	All	17, 17a, 17b*//

Table 3.3-3 (Continued)

TABLE NOTATION

ACTION 13 - With the number of channels OPERABLE less than required by the minimum channels OPERABLE requirement, within 1 hour initiate and maintain operation of the control room emergency air cleanup system in the emergency (except as required by ACTIONS 14, 15) mode of operation.

ACTION 14 - With the number of channels OPERABLE one less than the total number of channels, restore the inoperable channel to OPERABLE status within 7 days or within the next 6 hours initiate and maintain operation of the control room emergency air cleanup system in the isolation mode of operation.

ACTION 15 - With the number of channels OPERABLE less than required by the minimum channels OPERABLE requirement, within 1 hour initiate and maintain operation of the control room emergency air cleanup system in the isolation mode of operation.

ACTION 16 - With the number of channels OPERABLE less than required by the minimum channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.9.12.

ACTION 17 - With the number of channels OPERABLE less than required by the minimum channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.9.9. (Mode 6 only)

ACTION 17a - With the number of channels OPERABLE less than required by the minimum channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.4.5.1. (Mode 1, 2, 3, 4 only)

ACTION 17b - With the number of channels OPERABLE less than required by the minimum channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.3.3.9. (At all times)

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION TRIP VALUES

FUNCTIONAL UNIT	TRIP VALUE	ALLOWABLE VALUES
11. FUEL HANDLING ISOLATION (FHIS)		
a. Manual (Trip Buttons)	Not Applicable	Not Applicable
b. Airborne Radiation		
i. Gaseous	$\leq 1.3 \times 10^2$ cpm**	$\leq 1.4 \times 10^2$ cpm**
ii. Particulate/Iodine	$\leq 5.7 \times 10^4$ cpm**	$\leq 6.0 \times 10^4$ cpm**
c. Automatic Actuation Logic	Not Applicable	Not Applicable
12. CONTAINMENT PURGE ISOLATION (CPIS)		
a. Manual (Trip Buttons)	Not Applicable	Not Applicable
b. Airborne Radiation		
i. Gaseous	$\leq$ per ODCM	$\leq$ per ODCM
ii. Particulate	$\leq$ per ODCM	$\leq$ per ODCM
iii. Iodine	$\leq$ per ODCM	$\leq$ per ODCM
c. Containment Area Radiation (Gamma)	$\leq$ 2.4 mR/hr	$\leq$ 2.5 mR/hr
d. Automatic Actuation Logic	Not Applicable	Not Applicable

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AMENDMENT NO. 15

TABLE NOTATION

(1) Value may be decreased manually, to a minimum of greater than or equal to 300 psia, as pressurizer pressure is reduced, provided the margin between the pressurizer and this value is maintained at less than or equal to 400 psia;* the setpoint shall be increased automatically as pressurizer pressure is increased until the trip setpoint is reached. Trip may be manually bypassed below 400 psia; bypass shall be automatically removed whenever pressurizer is greater than or equal to 400 psia.

(2) Value may be decreased manually as steam generator pressure is reduced, provided the margin between the steam generator pressure and this value is maintained at less than or equal to 200 psi;* the setpoint shall be increased automatically as steam generator pressure is increased until the trip setpoint is reached.

(3) % of the distance between steam generator upper and lower level instrument nozzles.

(4) Inverse time relay set value 3165V, trip will occur within the tolerances specified in Figure 3.3-1 for the range of bus voltages.

(5) Actuated equipment only; does not result in CIAS.

*Variable setpoints are for use only during normal, controlled plant heatups and cooldowns.

**Above normal background.

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
11. FUEL HANDLING ISOLATION (FHIS)				
a. Manual (Trip Buttons)	N.A.	N.A.	R	N.A.
b. Airborne Radiation				
i. Gaseous	S	R	M	*
ii. Particulate/Iodine	S	R	M	*
c. Automatic Actuation Logic	N.A.	N.A.	R(3)	*
12. CONTAINMENT PURGE ISOLATION (CPIS)				
a. Manual (Trip Buttons)	N.A.	N.A.	R	N.A.
b. Airborne Radiation				
i. Gaseous	(2)	(2)	(2)	All
ii. Particulate	(2)	(2)	(2)	All
iii. Iodine	(2)	(2)	(2)	All
c. Containment Area Radiation (Gamma)	S	R	M	6
d. Automatic Actuation Logic	N.A.	N.A.	R (3)	All

TABLE NOTATION

(1) Each train or logic channel shall be tested at least every 62 days on a STAGGERED TEST BASIS.

(2) In accordance with Table 4.3-9 surveillance requirements for these instrument channels.

(3) Testing of Automatic Actuation Logic shall include energization/de-energization of each initiation relay and verification of the OPERABILITY of each initiation relay.

(4) A subgroup relay test shall be performed which shall include the energization/de-energization of each subgroup relay and verification of the OPERABILITY of each subgroup relay.

(5) Actuated equipment only; does not result in CIAS.

* With irradiated fuel in the storage pool.

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AMENDMENT NO. 16

ATTACHMENT "B"

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
11. FUEL HANDLING ISOLATION (FHIS)					
a. Manual (Trip Buttons)	2	1	1	**	16*//
b. Airborne Radiation					
i. Gaseous	2	1	1	**	16*//
ii. Particulate/Iodine	2	1	1	**	16*//
c. Automatic Actuation Logic	1/train	1	1	**	16*//
12. CONTAINMENT PURGE ISOLATION (CPIS)					
a. Manual (Trip Buttons)	2	1	1	6	17b*#
b. Airborne Radiation (2RT7804-1 or 2RT7807- 2)					
i. Gaseous	2	1	1	1,2,3,4	17a
				6	17b*#
ii. Particulate	2	1	1	1,2,3,4	17a
				6	17b*#
iii. Iodine	2	1	1	6	17b*#
c. Containment Area Radiation(Gamma) (2RT7856-1 or 2RT7857- 2)	2	1	1	1,2,3,4	17
				6	17b*#
d. Automatic Actuation Logic	1/train	1	1	1,2,3,4	17
				6	17b*#

MAY 16 1983
AMENDMENT NO. 13

Table 3.3-3 (Continued)

TABLE NOTATION

ACTION 13 - With the number of channels OPERABLE less than required by the minimum channels OPERABLE requirement, within 1 hour initiate and maintain operation of the control room emergency air cleanup system in the emergency (except as required by ACTIONS 14, 15) mode of operation.

ACTION 14 - With the number of channels OPERABLE one less than the total number of channels, restore the inoperable channel to OPERABLE status within 7 days or within the next 6 hours initiate and maintain operation of the control room emergency air cleanup system in the isolation mode of operation.

ACTION 15 - With the number of channels OPERABLE less than required by the minimum channels OPERABLE requirement, within 1 hour initiate and maintain operation of the control room emergency air cleanup system in the isolation mode of operation.

ACTION 16 - With the number of channels OPERABLE less than required by the minimum channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.9.12.

ACTION 17 - With the number of channels OPERABLE less than required by the minimum channels OPERABLE requirement, operation may continue provided that the purge valves are maintained closed.

ACTION 17a - With the number of channels OPERABLE less than required by the minimum channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.4.5.1. (Mode 1, 2, 3, 4 only)

ACTION 17b - With the number of channels OPERABLE less than required by the minimum channels OPERABLE requirement, close each of the containment purge penetrations providing direct access from the containment atmosphere to the outside atmosphere.

TABLE 3.3-[illegible] (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION TRIP VALUES

FUNCTIONAL UNIT	TRIP VALUE	ALLOWABLE VALUES
11. FUEL HANDLING ISOLATION (FHIS)		
a. Manual (Trip Buttons)	Not Applicable	Not Applicable
b. Airborne Radiation		
i. Gaseous	$\leq 1.3 \times 10^2$ cpm**	$\leq 1.4 \times 10^2$ cpm**
ii. Particulate/Iodine	$\leq 5.7 \times 10^4$ cpm**	$\leq 6.0 \times 10^4$ cpm**
c. Automatic Actuation Logic	Not Applicable	Not Applicable
12. CONTAINMENT PURGE ISOLATION (CPIS)		
a. Manual (Trip Buttons)	Not Applicable	Not Applicable
b. Airborne Radiation		
i. Gaseous	(6)(7)	(6)(7)
ii. Particulate	(6)(7)	(6)(7)
iii. Iodine	(6)(7)	(6)(7)
c. Containment Area Radiation (Gamma)	$\leq$ 325 mR/hr(MODES 1-4) $\leq$ 2.4mR/hr(MODE 6)	$\leq$340 mR/hr(MODES 1-4) $\leq$ 2.5 mR/hr(MODE 6)
d. Automatic Actuation Logic	Not Applicable	Not Applicable

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AMENDMENT NO. 16

TABLE NOTATION

(1) Value may be decreased manually, to a minimum of greater than or equal to 300 psia, as pressurizer pressure is reduced, provided the margin between the pressurizer and this value is maintained at less than or equal to 400 psia;* the setpoint shall be increased automatically as pressurizer pressure is increased until the trip setpoint is reached. Trip may be manually bypassed below 400 psia; bypass shall be automatically removed whenever pressurizer is greater than or equal to 400 psia.

(2) Value may be decreased manually as steam generator pressure is reduced, provided the margin between the steam generator pressure and this value is maintained at less than or equal to 200 psi;* the setpoint shall be increased automatically as steam generator pressure is increased until the trip setpoint is reached.

(3) % of the distance between steam generator upper and lower level instrument nozzles.

(4) Inverse time relay set value 3165V, trip will occur within the tolerances specified in Figure 3.3-1 for the range of bus voltages.

(5) Actuated equipment only; does not result in CIAS.

(6) The trip setpoint shall be set sufficiently high to prevent spurious alarms/trips yet sufficiently low to assure an alarm/trip should an inadvertant release occur.

(7) Prior to the completion of DCP 53N, the setpoints for Containment Airborne Radiation Monitor 2RT-7804-1 shall be determined by the ODCM.

*Variable setpoints are for use only during normal, controlled plant heatups and cooldowns.

**Above normal background.

MAY 1 6 1982
AMENDMENT NO. 13

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
11. FUEL HANDLING ISOLATION (FHIS)				
a. Manual (Trip Buttons)	N.A.	N.A.	R	N.A.
b. Airborne Radiation				
i. Gaseous	S	R	M	*
ii. Particulate/Iodine	S	R	M	*
c. Automatic Actuation Logic	N.A.	N.A.	R(3)	*
12. CONTAINMENT PURGE ISOLATION (CPIS)				
a. Manual (Trip Buttons)	N.A.	N.A.	R	N.A.
b. Airborne Radiation				
i. Gaseous	S	R	M	1,2,3,4,6
ii. Particulate	W	R	M	1,2,3,4,6
iii. Iodine	W	R	M	6
c. Containment Area Radiation (Gamma)	S	R	M	1,2,3,4,6
d. Automatic Actuation Logic	N.A.	N.A.	R (3)	1,2,3,4,6

TABLE NOTATION

(1) Each train or logic channel shall be tested at least every 62 days on a STAGGERED TEST BASIS.

(2) Deleted.

(3) Testing of Automatic Actuation Logic shall include energization/de-energization of each initiation relay and verification of the OPERABILITY of each initiation relay.

(4) A subgroup relay test shall be performed which shall include the energization/de-energization of each subgroup relay and verification of the OPERABILITY of each subgroup relay.

(5) Actuated equipment only; does not result in CIAS.

* With irradiated fuel in the storage pool.

AMENDMENT NO. 13
MAY 16 1983

ATTACHMENT "C"

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
11. FUEL HANDLING ISOLATION (FHIS)					
a. Manual (Trip Buttons)	2	1	1	**	16*#
b. Airborne Radiation					
i. Gaseous	2	1	1	**	16*#
ii. Particulate/Iodine	2	1	1	**	16*#
c. Automatic Actuation Logic	1/train	1	1	**	16*#
12. CONTAINMENT PURGE ISOLATION (CPIS)					
a. Manual (Trip Buttons)	2	1	1	6	17*#
b. Airborne Radiation					
i. Gaseous	2	1	1	All	17, 17a, 17b
ii. Particulate	2	1	1	All	17, 17a, 17b
iii. Iodine	2	1	1	All	17, 17b
c. Containment Area Radiation (Gamma)	2	1	1	6	17*#
d. Automatic Actuation Logic	1/train	1	1	All	17, 17a, 17b*#

Table 3.3-3 (Continued)

TABLE NOTATION

ACTION 13 - With the number of channels OPERABLE less than required by the minimum channels OPERABLE requirement, within 1 hour initiate and maintain operation of the control room emergency air cleanup system in the emergency (except as required by ACTIONS 14, 15) mode of operation.

ACTION 14 - With the number of channels OPERABLE one less than the total number of channels, restore the inoperable channel to OPERABLE status within 7 days or within the next 6 hours initiate and maintain operation of the control room emergency air cleanup system in the isolation mode of operation.

ACTION 15 - With the number of channels OPERABLE less than required by the minimum channels OPERABLE requirement, within 1 hour initiate and maintain operation of the control room emergency air cleanup system in the isolation mode of operation.

ACTION 16 - With the number of channels OPERABLE less than required by the minimum channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.9.12.

ACTION 17 - With the number of channels OPERABLE less than required by the minimum channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.9.9. (MODE 6 only)

ACTION 17a - With the number of channels OPERABLE less than required by the minimum channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.4.5.1. (MODE 1, 2, 3, 4 only)

ACTION 17b - With the number of channels OPERABLE less than required by the minimum channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.3.3.9. (At all times)

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION TRIP VALUES

FUNCTIONAL UNIT	TRIP VALUE	ALLOWABLE VALUES
11. FUEL HANDLING ISOLATION (FHIS)		
a. Manual (Trip Buttons)	Not Applicable	Not Applicable
b. Airborne Radiation		
i. Gaseous	$\leq 1.3 \times 10^2$ cpm**	$\leq 1.4 \times 10^2$ cpm**
ii. Particulate/Iodine	$\leq 5.7 \times 10^4$ cpm**	$\leq 6.0 \times 10^4$ cpm**
c. Automatic Actuation Logic	Not Applicable	Not Applicable
12. CONTAINMENT PURGE ISOLATION (CPIS)		
a. Manual (Trip Buttons)	Not Applicable	Not Applicable
b. Airborne Radiation		
i. Gaseous	$\leq$ per ODCM	$\leq$ per ODCM
ii. Particulate	$\leq$ per ODCM	$\leq$ per ODCM
iii. Iodine	$\leq$ per ODCM	$\leq$ per ODCM
c. Containment Area Radiation (Gamma)	$\leq$ 2.4 mR/hr	$\leq$ 2.5 mR/hr
d. Automatic Actuation Logic	Not Applicable	Not Applicable

TABLE 3.3-4 (Continued)

TABLE NOTATION

(1) Value may be decreased manually, to a minimum of greater than or equal to 300 psia, as pressurizer pressure is reduced, provided the margin between the pressurizer and this value is maintained at less than or equal to 400 psia;* the setpoint shall be increased automatically as pressurizer pressure is increased until the trip setpoint is reached. Trip may be manually bypassed below 400 psia; bypass shall be automatically removed whenever pressurizer is greater than or equal to 400 psia.

(2) Value may be decreased manually as steam generator pressure is reduced, provided the margin between the steam generator pressure and this value is maintained at less than or equal to 200 psi;* the setpoint shall be increased automatically as steam generator pressure is increased until the trip setpoint is reached.

(3) % of the distance between steam generator upper and lower level instrument nozzles.

(4) Inverse time relay set value 3165V, trip will occur within the tolerances specified in Figure 3.3-1 for the range of bus voltages.

(5) Actuated equipment only; does not result in CIAS.

*Variable setpoints are for use only during normal, controlled plant heatups and cooldowns.

**Above normal background.

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
11. FUEL HANDLING ISOLATION (FHIS)				
a. Manual (Trip Buttons)	N.A.	N.A.	R	N.A.
b. Airborne Radiation				
i. Gaseous	S	R	M	*
ii. Particulate/Iodine	S	R	M	*
c. Automatic Actuation Logic	N.A.	N.A.	R(3)	*
12. CONTAINMENT PURGE ISOLATION (CPIS)				
a. Manual (Trip Buttons)	N.A.	N.A.	R	N.A.
b. Airborne Radiation				
i. Gaseous	(2)	(2)	(2)	All
ii. Particulate	(2)	(2)	(2)	All
iii. Iodine	(2)	(2)	(2)	All
c. Containment Area Radiation (Gamma)	S	R	M	6
d. Automatic Actuation Logic	N.A.	N.A.	R (3)	All

TABLE NOTATION

(1) Each train or logic channel shall be tested at least every 62 days on a STAGGERED TEST BASIS.

(2) In accordance with Table 4.3-9 Surveillance Requirements for these instrument channels.

(3) Testing of Automatic Actuation Logic shall include energization/de-energization of each initiation relay and verification of the OPERABILITY of each initiation relay.

(4) A subgroup relay test shall be performed which shall include the energization/de-energization of each subgroup relay and verification of the OPERABILITY of each subgroup relay.

(5) Actuated equipment only; does not result in CIAS.

* With irradiated fuel in the storage pool.

ATTACHMENT "D"

TABLE 3.3-3 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
11. FUEL HANDLING ISOLATION (FHIS)					
a. Manual (Trip Buttons)	2	1	1	**	16*#
b. Airborne Radiation					
i. Gaseous	2	1	1	**	16*#
ii. Particulate/Iodine	2	1	1	**	16*#
c. Automatic Actuation Logic	1/train	1	1	**	16*#
12. CONTAINMENT PURGE ISOLATION (CPIS)					
a. Manual (Trip Buttons)	2	1	1	6	17b*#
b. Airborne Radiation (3RT-7804-1 or 3RT-7807-2)					
i. Gaseous	2	1	1	1,2,3,4	17a
				6	17b*#
ii. Particulate	2	1	1	1,2,3,4	17a
				6	17b*#
iii. Iodine	2	1	1	6	17b*#
c. Containment Area Radiation (Gamma) (3RT-7856-1 or 3RT-7857-2)	2	1	1	1,2,3,4	17
				6	17b*#
d. Automatic Actuation Logic	1/train	1	1	1,2,3,4	17
				6	17b*#

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Table 3.3-3 (Continued)

TABLE NOTATION

ACTION 13 - With the number of channels OPERABLE less than required by the minimum channels OPERABLE requirement, within 1 hour initiate and maintain operation of the control room emergency air cleanup system in the emergency (except as required by ACTIONS 14, 15) mode of operation.

ACTION 14 - With the number of channels OPERABLE one less than the total number of channels, restore the inoperable channel to OPERABLE status within 7 days or within the next 6 hours initiate and maintain operation of the control room emergency air cleanup system in the isolation mode of operation.

ACTION 15 - With the number of channels OPERABLE less than required by the minimum channels OPERABLE requirement, within 1 hour initiate and maintain operation of the control room emergency air cleanup system in the isolation mode of operation.

ACTION 16 - With the number of channels OPERABLE less than required by the minimum channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.9.12.

ACTION 17 - With the number of channels OPERABLE less than required by the minimum channels OPERABLE requirement, operation may continue provided that the purge valves are maintained closed.

ACTION 17a - With the number of channels OPERABLE less than required by the minimum channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.4.5.1. (MODE 1, 2, 3, 4 only)

ACTION 17b - With the number of channels OPERABLE less than required by the minimum channels OPERABLE requirement, close each of the containment purge penetrations providing direct access from the containment atmosphere to the outside atmosphere.

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TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION TRIP VALUES

FUNCTIONAL UNIT	TRIP VALUE	ALLOWABLE VALUES
11. FUEL HANDLING ISOLATION (FHIS)		
a. Manual (Trip Buttons)	Not Applicable	Not Applicable
b. Airborne Radiation		
i. Gaseous	$\leq 1.3 \times 10^2$ cpm**	$\leq 1.4 \times 10^2$ cpm**
ii. Particulate/Iodine	$\leq 5.7 \times 10^4$ cpm**	$\leq 6.0 \times 10^4$ cpm**
c. Automatic Actuation Logic	Not Applicable	Not Applicable
12. CONTAINMENT PURGE ISOLATION (CPIS)		
a. Manual (Trip Buttons)	Not Applicable	Not Applicable
b. Airborne Radiation		
i. Gaseous	(6)(7)	(6)(7)
ii. Particulate	(6)(7)	(6)(7)
iii. Iodine	(6)(7)	(6)(7)
c. Containment Area Radiation (Gamma)	$\leq$ 325 mR/hr(MODES 1-4) $\leq$ 2.4 mR/hr(MODE 6)	$\leq$ 340 mR/hr (MODES 1-4) $\leq$ 2.5 mR/hr (MODE 6)
d. Automatic Actuation Logic	Not Applicable	Not Applicable

TABLE 3.3-4 (Continued)

TABLE NOTATION

(1) Value may be decreased manually, to a minimum of greater than or equal to 300 psia, as pressurizer pressure is reduced, provided the margin between the pressurizer and this value is maintained at less than or equal to 400 psia;* the setpoint shall be increased automatically as pressurizer pressure is increased until the trip setpoint is reached. Trip may be manually bypassed below 400 psia; bypass shall be automatically removed whenever pressurizer is greater than or equal to 400 psia.

(2) Value may be decreased manually as steam generator pressure is reduced, provided the margin between the steam generator pressure and this value is maintained at less than or equal to 200 psi;* the setpoint shall be increased automatically as steam generator pressure is increased until the trip setpoint is reached.

(3) % of the distance between steam generator upper and lower level instrument nozzles.

(4) Inverse time relay set value 3165V, trip will occur within the tolerances specified in Figure 3.3-1 for the range of bus voltages.

(5) Actuated equipment only; does not result in CIAS.

(6) The trip setpoint shall be set sufficiently high to prevent spurious alarms/trips yet sufficiently low to assure an alarm/trip should an inadvertant release occur.

(7) Prior to the completion of DCP 53N, the setpoints for Containment Airborne Radiation Monitor 3RT-7804-1 shall be determined by the ODCM.

*Variable setpoints are for use only during normal, controlled plant heatups and cooldowns.

**Above normal background.

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
11. FUEL HANDLING ISOLATION (FHIS)				
a. Manual (Trip Buttons)	N.A.	N.A.	R	N.A.
b. Airborne Radiation				
i. Gaseous	S	R	M	*
ii. Particulate/Iodine	S	R	M	*
c. Automatic Actuation Logic	N.A.	N.A.	R(3)	*
12. CONTAINMENT PURGE ISOLATION (CPIS)				
a. Manual (Trip Buttons)	N.A.	N.A.	R	N.A.
b. Airborne Radiation				
i. Gaseous	S	R	M	1,2,3,4,6
ii. Particulate	W	R	M	1,2,3,4,6
iii. Iodine	W	R	M	6
c. Containment Area Radiation (Gamma)	S	R	M	1,2,3,4,6
d. Automatic Actuation Logic	N.A.	N.A.	R (3)	1,2,3,4,6

TABLE NOTATION

(1) Each train or logic channel shall be tested at least every 62 days on a STAGGERED TEST BASIS.

(2) Deleted.

(3) Testing of Automatic Actuation Logic shall include energization/de-energization of each initiation relay and verification of the OPERABILITY of each initiation relay.

(4) A subgroup relay test shall be performed which shall include the energization/de-energization of each subgroup relay and verification of the OPERABILITY of each subgroup relay.

(5) Actuated equipment only; does not result in CIAS.

* With irradiated fuel in the storage pool.

DESCRIPTION OF PROPOSED CHANGES NPF-10-100 AND NPF-15-100
AND SAFETY ANALYSIS.

This is a request to revise Technical Specification 3/4.3.3.1, RADIATION ALARM MONITORING INSTRUMENTATION.

Existing Specifications

Unit 2: See Attachment "A"
Unit 3: See Attachment "C"

Proposed Specifications

Unit 2: See Attachment "B"
Unit 3: See Attachment "D"

Description

The proposed change is required to clarify the techinical specification requirements relating to radiation monitors which support alarm functions, and to improve consistency with the FSAR, Standard Technical Specifications (STS) and other technical specifications covering other functions served by the same instruments. Additionally, the proposed change adds flexibility to the ACTION statements and revises plant vent stack monitoring requirements and the applicability for the condenser evacuation system monitors. To this end the following revisions are made:

1. Consistent with the STS, the word "alarm" is deleted from the title of Specificaton 3/4.3.3.1 and elsewhere in the specification where it is used in this context and the words "alarm/trip" are substituted for the word "alarm" where it is used in the context of setpoint.

2. Specification 3/4.3.2, Engineered Safety Features Actuation System (ESFAS), delineates functional requirements for radiation monitors which support the Control Room Isolation Signal (CRIS), the Fuel Handling Isolation Signal (FHIS) and the Containment Purge Isolation Signal (CPIS) functions. Functional requirements for the Radiation monitors which support these ESFAS functions are also specified by Specifiation 3/4.3.3.1. The proposed changes to Items 1.b, 2.a, 2.b and 2.c of Tables 3.3-6 and 4.3-3 make Specification 3/4.3.3.1 consistent with Specification 3/4.3.2 by directly referencing the 3/4.3.2 setpoints and ACTION requirements. The changes to Items 1.b and 2.b are also consistent with Proposed Changes NPF-10-99 and NPF-15-99 which revise the Specification 3/4.3.2 requirements relating to CPIS to be consistent with FSAR commitments.

3. To satisfy NUREG 0737 requirements, Containment High Range Area Monitors, Main Steam Line Area Monitors, Plant Vent/Purge Stack and Condenser Evacuation System wide range noble gas monitors were installed. Currently, the operability requirements for these monitors are

distributed between Specification 3/4.3.3.6, Accident Monitoring Instrumentation and Specification 3/4.3.3.1, Radiation Monitoring Alarm Instrumentation. The proposed change consolidates the requirements for these 0737 radiation monitors in Specification 3/4.3.3.1. Another proposed change (NPF-10-101/NPF-15-101) deletes the requirements for these monitors from Specification 3/4.3.3.6. The consolidation of the requirements for the NUREG 0737 monitors in Specification 3/4.3.3.1 will reduce the complexity of the specifications. Consolidation of the requirements for NUREG 0737 radiation monitors is consistant with the STS and St. Lucie Unit 2 Technical Specifications.

Specifiation 3.3.3.6 currently requires both wide range plant vent stack monitors (2 RT-7865-1 and 3 RT-7865-1) to be operable in MODES 1-3. In addition to consolidating the NUREG 0737 radiation monitoring requirements in Specification 3.3.3.1, the proposed change reduces the required number of wide range plant vent stack monitors from two to one. This is acceptable because the Unit 2 and Unit 3 plant vent stacks are not totally independent effluent paths. Exhaust from the shared auxiliary buildings and the two fuel handling buildings are mixed in a common plenum and released via the Units 2 and 3 plant vent stacks. Plant vent stack monitor 2/3 RT-7808-1 provides noble gas monitoring capability for normal operation and anticipated operational occurrences. Wide range noble gas effluent monitors 2 RT--7865-1 and 3 RT-7865-1 for the Units 2 and 3 plant vent stacks, respectively provide post accident noble gas monitoring capability and can monitor effluents from either the vent stack or the purge stack of the associated unit. Although only approximately one-half of the plant vent stack effluent is monitored by each of the RT-7865 wide range noble gas monitors, sufficient data has been accumulated to provide a consistently conservative estimate of the releases from one plant vent stack based on the readings from the other unit's plant vent stack monitor. It is desireable to have both plant vent stack monitors (2 RT-7865-1 and 3 RT-7865-1) operable. However, because post accident plant vent stack releases can be tracked reliably by one of the plant vent stack wide range monitors, a minimum of one channel is required to be operable in MODES 1-3. In MODE 4, in lieu of th wide range plant vent stack monitors, the plant vent stack noble gas monitoring function can be satisfied by 2/3 RT-7808-1, the normal range instrument, because both the probability of occurrence of design bases accidents and consequent effluent activity are likely to be significantly lower in MODE 4.

Each of the wide range plant vent stack monitors (2 RT-7865-1, 3 RT-7865-1) also serves the post accident wide range purge effluent monitoring function for its associated unit. With the above minimum channels operable requirement, a unit can operate without wide range post accident purge effluent monitoring capability necessarily being available. Technical Specification requirements for containment and purge isolation system operability ensure that the containment purge stack would not be an uncontrolled release path in the event that a design basis accident occurs. Post accident purging would be a

controlled action. Implicit in the control of post accident purging is the requirement to have adequate monitoring capability prior to initiating a post accident containment purge.

4. The proposed change revises ACTION 18 to eliminate the current reference to ACTIONs 20 and 21 of Specification 3.3.3.6. In addition, ACTIONs 18 and 19 are revised to allow more time to restore inoperable channels to OPERABLE status. ACTION 18, i.e. ACTION 20 by cross reference, currently allows 7 days to restore an inoperable channel. ACTION 20 applies to many instruments which would be used to mitigate the consequences of a design basis accident, in addition to the radiation monitoring channels currently covered by ACTIONs 18 and 20. It should be noted that the radiation monitoring channels do not directly contribute to the mitigation of consequences of a design basis accident in the same sense as the other accident monitoring instrumentation listed in Table 3.3-10. Therefore, less severe ACTIONs are justifiable for radiation monitoring channels which are not directly used in mitigating of the consequences of design basis accidents.

   ACTION 18 (and 20) which applies to the area monitors-listed in Table 3.3-6, currently allow 7 days to restore an inoperable instrument or shutdown. The high range area monitors have proven to be difficult to trouble-shoot and in the past it has taken very close to 7 days to repair an inoperable instrument. The difficulty associated with trouble-shooting of these instruments is directly related to the requirement for these instruments to be environmentally qualified to operate in the postulated high post accident radiation fields. This requirement precludes the use of pre-amplifiers located at the detectors. As result only the very small currents (on the order of a few pico amps) generated by the detectors are carried by the cables to the instrument electronics located in low radiation areas. Because of the small currents involved, trouble-shooting is difficult and time consuming. The proposed change to ACTION 18 allows 30 days to restore an inoperable instrument to operable status. Consistent with past experience this change would significantly reduce the possibility of a shutdown.

   ACTION 19 is clarified with respect to the special reporting requirements. ACTION 19 part 1) currently states that a pre-planned alternate method of monitoring be initiated if the channel is not returned to operable status within 72 hours. If the instrument is returned to operable status within 72 hours no action is required. However, part 2) of ACTION 19 requires a Special Report to be submitted within 14 days following the event. The word "event" is ambiguous in that the event could be either the inoperability of the channel or the initiation of the pre-planned alternate. If "event" refers to the inoperability, then in a situation where the channel was restored to operable status within 72 hours and no pre-planned alternate was initiated, the special report outlining the action taken, and plans and schedule for restoring operability is meaningless. The proposed change clarifies ACTION 19 to require a special report only if the inoperability is not corrected within 72 hours and the pre-planned alternate is initiated.

5. The proposed change revises the Table 3.3-6 applicability for the plant vent stack and condenser evacuation system noble gas monitors. The current all modes applicability reflects effluent monitoring requirements. Effluent monitoring instrumentation requirements are more appropriately specified in Specification 3.3.3.9. The proposed change reduces the applicability for the plant vent stack and condenser evacuation system monitors from the accident monitoring instrumentation standpoint. This is consistent with the Standard Technical Specifications for radiation monitoring instrumentation. The effect of this will be to relieve more stringent accident monitoring requirements from being applied in MODES where only effluent monitoring is the primary concern.

   The condenser evacuation system is monitored because it is a potential gaseous radioactive effluent release path during normal plant operation due to primary to secondary leakage within the allowable limits and in the event of a steam generator tube rupture. However, when the Main Steam Isolation Valves (MSIV's) and main steam isolating valve bypass valves are fully closed, the condenser is isolated from its potential source of gaseous activity and, therefore, is not a potential gaseous radioactive effluent release path when these conditions are met. Accordingly, the proposed change requires noble gas monitoring for the condenser evacuation system in MODES 1-4 only when the MSIV's and MSIV bypass valves are open. A corresponding proposed change (NPF-10-102 and NPF-15-102) makes a similar ajustment to the condenser evacuation system monitoring applicability of Specification 3.3.3.9.

6. The proposed change identifies the required radiation monitoring instrumentation by instrument number to improve clarity of the Specification.

Safety analysis

The proposed change discussed above shall be deemed to involve a significant hazards consideration if there is a positive finding in any one of the following areas:

1. Will operation of the facility in accordance with this proposed change involve a significant increase in the probability or consequences of any accident proviously evaluated.

   Response: No.

   The proposed change affects the technical specification requirements for certain radiation monitoring instrumentation. With the exception of the containment purge isolation area monitors (Table 3.3-6 Item 1.b) and the containment airborne monitors (Table 3.3-6 Item 2.b), the proposed change does not affect the requirements for any radiation monitors credited in the mitigation of the consequences of any previously evaluated accident. The containment purge isolation area monitors and the containment airborne monitors support the ESFAS, containment purge isolation function.

This function is intended to mitigate the radiological consequences of an in-containment fuel handling accident in MODE 6 and small break LOCA in MODES 1-4. The proposed change leaves this function intact. With the exception of the fuel handling accident noted above, no other previously analyzed accidents including the small break LOCA take credit for CPIS to mitigate the offsite dose consequences.

Therefore, the proposed change does not increase the probability or consequences of any previously evaluated accident.

2. Will operation of the facility in accordance with this proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

   Response: No.

   The proposed change clarifies the technical specification requirements for radiation monitoring instrumentation to be consistent with the FSAR. The proposed change does not affect the configuration or operation of the plant. It therefore does not create the possibility of a new or different kind of accident from any previously evaluated.

3. Will operation of the facility in accordance with the proposed change involve a significant reduction in a margin of safety?

   Response: No.

   The proposed change clarifies the technical specifiation requirements for radiation monitoring instrumentation. The proposed change reduces operability requirements for noble gas radiation monitors on the plant vent stacks and condenser evacuation system. It also increases the time allowed in ACTION statements to accommodate repair, maintenance and calibration of the affected instruments. Although the proposed change involves a reduction in requirements, it maintains the ability to provide the required post-accident assessment of radioactive gaseous releases and radiation conditions within the plant. The radiation monitors affected by the proposed change are not credited with the mitigation of any previously evaluated accident, with the exception of those supporting CPIS. The requirements for the CPIS related monitors are maintained by the proposed change to be consistent with the FSAR. The proposed change does not affect the consequences of any previously evaluated accident. Therefore, no margin of safety is reduced.

48 FR 14864 dated April 6, 1983 provided examples of amendments that are not likely to involve a significant hazards consideration. In comparison with these examples, Items 1 and 6 of the description section are similar to example (i) in that they are editorial in nature. Items 2, 3, 4 and 5 involve some reduction in existing technical specification requirements. Although these items do not increase the probablity or consequences of any previously analyzed accident, they would likely be considered to be most similar to example (vi) in that the reduction in technical specification requirements may be perceived to insignificantly reduce in some way a safety margin.

Safety And Significant Hazards Determination

Based on the above Safety Analysis, it is concluded that: (1) the proposed change does not constitute a significant hazards consideration as defined by 10 CFR 50.92; and (2) there is reasonable assurance that the health and safety of the public will not be endangered by the proposed change; and (3) this action will not result in a condition which significantly alters the impact of the station on the environment as described in the NRC Final Environmental Statement.

PSmith:0913

ATTACHMENT "A"

3/4.3.3 MONITORING INSTRUMENTATION

RADIATION MONITORING ALARM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.1 The radiation monitoring alarm instrumentation channels shown in Table 3.3-6 shall be OPERABLE with their alarm/trip setpoints within the specified limits.

APPLICABILITY: As shown in Table 3.3-6.*

ACTION:

a. With a radiation monitoring channel alarm setpoint exceeding the value shown in Table 3.3-6, adjust the setpoint to within the limit within 4 hours or declare the channel inoperable.

b. With one or more radiation monitoring alarm channels inoperable, take the ACTION shown in Table 3.3-6.

c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.1 Each radiation monitoring alarm instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST operations for the MODES and at the frequencies shown in Table 4.3-3.

*See Special Test Exception 3.10.5.

TABLE 3.3-6

RADIATION MONITORING ALARM INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ALARM SETPOINT	MEASUREMENT RANGE	ACTION
1. Area Monitors					
a. Containment - High Range	2	1, 2, 3	10 R/hr	$1-10^8$ R/hr	18
		4	10 R/hr		19
b. Containment - Purge Isolation	1	1, 2, 3, 4	$\leq$ 325 mR/hr	$10^{-1}-10^5$ mR/hr	19
		6	#		(a)
c. Main Steam Line	1/line	1, 2, 3	1 mR/hr (low); 1 R/hr (high)	$10^{-1}-10^4$ mR/hr;	18
		4	1 mR/hr (low); 1 R/hr (high)		19
2. Process Monitors					
a. Fuel Storage Pool Airborne					
i. Gaseous	1	*	#	10^1-10^7 cpm	(d)
ii. Particulate/Iodine	1	*	#	10^1-10^7 cpm	(d)
b. Containment Airborne					
i. Gaseous	1	All	Per ODCM	10^1-10^7 cpm	(a)(b)(c)
ii. Particulate	1	All	Per ODCM	10^1-10^7 cpm	(a)(b)(c)
iii. Iodine	1	All	Per ODCM	10^1-10^7 cpm	(a)(c)
c. Control Room Airborne					
i. Particulate/Iodine	1	All	#	10^1-10^7 cpm	(e)
ii. Gaseous	1	All	#	10^1-10^7 cpm	(e)

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TABLE 3.3-6 (Continued)

RADIATION MONITORING ALARM INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ALARM SETPOINT	MEASUREMENT RANGE	ACTION
3. Noble Gas Monitors					
a. Plant Vent Stack	1	All	Per ODCM	10^1 - 10^7 cpm	19, (c)
b. Condenser Evacuation System	1	All	Per ODCM	10^1 - 10^7 cpm	19, (c)

TABLE 3.3-6 (Continued)

ACTION STATEMENTS

ACTION 18 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.3.3.6.

ACTION 19 - With the number of OPERABLE Channels less than required by the Minimum Channels OPERABLE requirement, either restore the inoperable Channel(s) to OPERABLE status within 72 hours, or:

1) Initiate the preplanned alternate method of monitoring the appropriate parameter(s), and

2) Prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within 14 days following the event outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the system to OPERABLE status.

#In accordance with Engineered Safety Feature trip value specified by Table 3.3-4.

*With irradiated fuel in the storage pool.

(a) In accordance with Table 3.3-3 - ACTION 17.

(b) In accordance with Table 3.3-3 - ACTION 17a.

(c) In accordance with Table 3.3-3 - ACTION 17b.

(d) In accordance with Table 3.3-3 - ACTION 16.

(e) In accordance with Table 3.3-3 - ACTION 13.

TABLE 4.3-3

RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

	INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
1.	Area Monitors				
	a. Containment - High Range	S	R	M	1, 2, 3, 4
	b. Containment - Purge Isolation	S	R	M	1, 2, 3, 4
		#	#	#	6
	c. Main Steam Line	S	R	M	1, 2, 3, 4
2.	Process Monitors				
	a. Fuel Storage Pool Airborne				
	i. Gaseous	#	#	#	*
	ii. Particulate/Iodine	#	#	#	*
	b. Containment Airborne				
	i. Gaseous	@	@	@	All
	ii. Particulate	@	@	@	All
	iii. Iodine	@	@	@	All
	c. Control Room Airborne				
	i. Particulate	#	#	#	All
	ii. Gaseous	#	#	#	All

TABLE 4.3-3

RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
PROCESS MONITORS (Continued)				
3. Noble Gas Monitors				
a. Plant Vent Stack	@	@	@	All
b. Condenser Evacuation System	@	@	@	All

NOTES:

#In accordance with Table 4.3-2 surveillance requirements for these instrument channels.
*With irradiated fuel in the storage pool.
@In accordance with Table 4.3-9 surveillance requirements for these instrument channels.

ATTACHMENT "B"

3/4.3.3 MONITORING INSTRUMENTATION

RADIATION MONITORING INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.1 The radiation monitoring instrumentation channels shown in Table 3.3-6 shall be OPERABLE with their alarm/trip setpoints within the specified limits.

APPLICABILITY: As shown in Table 3.3-6.*

ACTION:

a. With a radiation monitoring channel alarm/trip setpoint exceeding the value shown in Table 3.3-6, adjust the setpoint to within the limit within 4 hours or declare the channel inoperable.

b. With one or more radiation monitoring channels inoperable, take the ACTION shown in Table 3.3-6.

c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.1 Each radiation monitoring instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST operations for the MODES and at the frequencies shown in Table 4.3-3.

*See Special Test Exception 3.10.5.

TABLE 3.3-6

RADIATION MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ALARM /TRIP SETPOINT	MEASUREMENT RANGE	ACTION
1. Area Monitors					
a. Containment - High Range (2RT-7820-1 and 2RT-7820-2)	**2**	**1, 2, 3**	**10 R/hr**	**1-10^8 R/hr**	**18, 18a**
		4	**10 R/hr**		**19**
b. Containment - Purge Isolation (2RT-7856-1 or 2RT-7857-2)	**1**	**1, 2, 3, 4**	**#**	**10^{-1}-10^5 mR/hr**	**17**
		6	**#**		**17b**
c. Main Steam Line A Channel consists of 2RT-7874A and 2RT-7875A or 2RT-7874B and 2RT-7875B	**1/line**	**1, 2, 3**	**1 mR/hr (low); 1 R/hr (high)**	**10^{-1}-10^4 mR/hr;**	**18**
		4	**1 mR/hr (low); 1 R/hr (high)**		**19**
2. Process Monitors					
a. Fuel Storage Pool Airborne (2 RT-7822-1 or 2 RT-7823-2)					
i. Gaseous	**1**	*****	**#**	**10^1 -10^7 cpm**	**16**
ii. Particulate/Iodine	**1**	*****	**#**	**10^1 -10^7 cpm**	**16**
b. Containment Airborne (2RT-7804-1 or 2RT-7807-2)					
i. Gaseous	1	1,2,3,4	#	10^1 - 10^7 cpm	17a
		6	#		17b
ii. Particulate	1	1,2,3,4	#	10^1 - 10^7 cpm	17a
		6	#		17b
iii. Iodine	1	6	#	10^1 - 10^7 cpm	17b
c. Control Room Airborne (2/3 RT-7824-1 or 2/3 RT-7825-2)					
i. Particulate	1	All	#	10^1 - 10^7 cpm	13
ii. Gaseous	1	All	#	10^1 - 10^7 cpm	13

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TABLE 3.3-6 (Continued)

RADIATION MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ALARM/TRIP SETPOINT	MEASUREMENT RANGE	ACTION
3. Noble Gas Monitors					
a. Plant Vent Stack					
Wide Range(2RT-7865-1 or 3RT-7865-1)	1	1,2,3	Per ODCM	10^{-7}-10^{5} uCi/cm^3	19
Normal Range(2RT-7865-1, 3RT-7865-1 or 2/3RT-7808)	1	4	Per ODCM	10^{-6}-10^{-1}uCi/cm^3	19
b. Condenser Evacuation System					
Wide Range(2RT-7870-1)	1	1,2,3(1)	Per ODCM	10^{-7}-10^{5} uCi/cm^3	19
Normal Range(2RT-7818 or 2RT-7870-1)	1	4 (1)	Per ODCM	10^{-6}-10^{2} uCi/cm^3	19

(1) With any main steam isolation valve and/or any main steam isolating valve bypass valve not fully closed.

TABLE 3.3-6 (Continued)

ACTION STATEMENTS

ACTION 13 - With the number of channels OPERABLE less than required by the minimum channels OPERABLE requirement, within 1 hour initiate and maintain operation of the control room emergency air cleanup system in the emergency (except as required by ACTIONS 14, 15) mode of operation.

ACTION 16 - With the number of channels OPERABLE less than required by the minimum channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.9.12.

ACTION 17 - With the number of channels OPERABLE less than required by the minimum channels OPERABLE requirement, operation may continue provided that the purge valves are maintained closed.

ACTION 17a - With the number of channels OPERABLE less than required by the minimum channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.4.5.1. (Mode 1, 2, 3, 4 only)

ACTION 17b - With the number of channels OPERABLE less than required by the minimum channels OPERABLE requirement, close each of the containment purge penetrations providing direct access from the containment atmosphere to the outside atmosphere.

ACTION 18 - With the number of channels OPERABLE one less than Minimum Channels OPERABLE requirement, either restore the inoperable channel to OPERABLE status within 30 days, or be in HOT SHUTDOWN within the next 12 hours.

ACTION 18a - With both channels inoperable, restore the inoperable channel(s) to OPERABLE status within 48 hours, or be in HOT SHUTDOWN within the next 12 hours.

ACTION 19 - With the number of OPERABLE Channels less than required by the Minimum Channels OPERABLE requirement, either restore the inoperable Channel(s) to OPERABLE status within 72 Hours,or:

1) Initiate the preplanned and alternate method of monitoring the appropriate parameter(s), and

2) Prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within 14 days following initiation of the pre-planned alternate outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the system to OPERABLE status.

#In accordance with Engineered Safety Feature trip value specified by Table 3.3-4
* With irradiated fuel in the storage pool.
ACTIONS 13, 16, 17, 17a and 17b are repeated from Table 3.3-3 for reference.

TABLE 4.3-3

RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
1. Area Monitors				
a. Containment - High Range (2RT-7820-1, 2RT-7820-2)	S	R	M	1, 2, 3, 4
b. Containment - Purge Isolation (2RT-7856-1, 2RT-7857-2)	S	R	M	1, 2, 3, 4, 6
c. Main Steam Line (2RT-7874A, 2RT-7875A, 2RT-7874B, 2RT-7875B)	S	R	M	1, 2, 3, 4
2. Process Monitors				
a. Fuel Storage Pool Airborne (2RT-7822-1, 2RT-7823-2)				
i. Gaseous	#	#	#	*
ii. Particulate/Iodine	#	#	#	*
b. Containment Airborne (2RT-7804-1, 2RT-7807-2)				
i. Gaseous	#	#	#	1,2,3,4,6
ii. Particulate	#	#	#	1,2,3,4,6
iii. Iodine	#	#	#	6
c. Control Room Airborne (2/3RT-7824-1, 2/3RT-7825-2)				
i. Particulate	#	#	#	All
ii. Gaseous	#	#	#	All

TABLE 4.3-3

RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
PROCESS MONITORS (Continued)				
3. Noble Gas Monitors				
a. Plant Vent Stack (2RT-7865-1, 3RT-7865-1, 2/3RT-7808)	D	R	Q	1,2,3,4
b. Condenser Evacuation System (2RT-7870-1, 2RT-7818-1)	D	R	Q	1,2,3,4(1)

NOTES:

#In accordance with Table 4.3-2 surveillance requirements for these instrument channels.

*With irradiated fuel in the storage pool.

(1) With any main steam isolation valve and/or any main steam isolating valve bypass valve not fully closed.

ATTACHMENT "C"

3/4.3.3 MONITORING INSTRUMENTATION

RADIATION MONITORING ALARM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.1 The radiation monitoring alarm instrumentation channels shown in Table 3.3-6 shall be OPERABLE with their alarm/trip setpoints within the specified limits.*

APPLICABILITY: As shown in Table 3.3-6.

ACTION:

a. With a radiation monitoring channel alarm setpoint exceeding the value shown in Table 3.3-6, adjust the setpoint to within the limit within 4 hours or declare the channel inoperable.

b. With one or more radiation monitoring alarm channels inoperable, take the ACTION shown in Table 3.3-6.

c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.1 Each radiation monitoring alarm instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST operations for the MODES and at the frequencies shown in Table 4.3-3.

---

*Continuous monitoring and sampling of the containment purge exhaust directly from the purge stack shall be provided for the low and high volume (8-inch and 42-inch) containment purge prior to startup following the first refueling outage. Containment airborne monitor 3RT-7804-1 or 3RT-7807-2 and associated sampling media shall perform these functions prior to initial criticality. From initial criticality to the startup following the first refueling outage containment airborne monitor 3RT-7804-1 and associated sampling media shall perform the above required functions.

TABLE 3.3-6

RADIATION MONITORING ALARM INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ALARM SETPOINT	MEASUREMENT RANGE	ACTION
1. Area Monitors					
a. Containment - High Range	2	1, 2, 3	10 R/hr	$1-10^8$ R/hr	18
		4	10 R/hr		19
b. Containment - Purge Isolation	1	1, 2, 3, 4	$\leq$ 325 mR/hr	$10^{-1}-10^5$ mR/hr	19
		6	#		(a)
c. Main Steam Line	1/line	1, 2, 3	1 mR/hr (low); 1 R/hr (high)	$10^{-1}-10^4$ mR/hr;	18
		4	1 mR/hr (low); 1 R/hr (high)		19
2. Process Monitors					
a. Fuel Storage Pool Airborne					
i. Gaseous	1	*	#	10^1-10^7 cpm	(d)
ii. Particulate/Iodine	1	*	#	10^1-10^7 cpm	(d)
b. Containment Airborne					
i. Gaseous	1	All	Per ODCM	10^1-10^7 cpm	(a)(b)(c)
ii. Particulate	1	All	Per ODCM	10^1-10^7 cpm	(a)(b)(c)
iii. Iodine	1	All	Per ODCM	10^1-10^7 cpm	(a)(c)
c. Control Room Airborne					
i. Particulate/Iodine	1	All	#	10^1-10^7 cpm	(e)
ii. Gaseous	1	All	#	10^1-10^7 cpm	(e)

TABLE 3.3-6 (Continued)

RADIATION MONITORING ALARM INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ALARM SETPOINT	MEASUREMENT RANGE	ACTION
3. Noble Gas Monitors					
a. Plant Vent Stack	1	All	Per ODCM	10^1 - 10^7 cpm	19, (c)
b. Condenser Evacuation System	1	All	Per ODCM	10^1 - 10^7 cpm	19, (c)

TABLE 3.3-6 (Continued)

ACTION STATEMENTS

ACTION 18 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.3.3.6.

ACTION 19 - With the number of OPERABLE Channels less than required by the Minimum Channels OPERABLE requirement, either restore the inoperable Channel(s) to OPERABLE status within 72 hours, or:

1) Initiate the preplanned alternate method of monitoring the appropriate parameter(s), and

2) Prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within 14 days following the event outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the system to OPERABLE status.

#In accordance with Engineered Safety Feature trip value specified by Table 3.3-4.

*With irradiated fuel in the storage pool.

(a) In accordance with Table 3.3-3 - ACTION 17.

(b) In accordance with Table 3.3-3 - ACTION 17a.

(c) In accordance with Table 3.3-3 - ACTION 17b.

(d) In accordance with Table 3.3-3 - ACTION 16.

(e) In accordance with Table 3.3-3 - ACTION 13.

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TABLE 4.3-3

RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
1. Area Monitors				
a. Containment - High Range	S	R	M	1, 2, 3, 4
b. Containment - Purge Isolation	S	R	M	1, 2, 3, 4
	#	#	#	6
c. Main Steam Line	S	R	M	1, 2, 3, 4
2. Process Monitors				
a. Fuel Storage Pool Airborne				
i. Gaseous	#	#	#	*
ii. Particulate/Iodine	#	#	#	*
b. Containment Airborne				
i. Gaseous	@	@	@	All
ii. Particulate	@	@	@	All
iii. Iodine	@	@	@	All
c. Control Room Airborne				
i. Particulate	#	#	#	All
ii. Gaseous	#	#	#	All

TABLE 4.3-3

RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
PROCESS MONITORS (Continued)				
3. Noble Gas Monitors				
a. Plant Vent Stack	@	@	@	All
b. Condenser Evacuation System	@	@	@	All

NOTES:

#In accordance with Table 4.3-2 surveillance requirements for these instrument channels.
*With irradiated fuel in the storage pool.
@In accordance with Table 4.3-9 surveillance requirements for these instrument channels.

ATTACHMENT "D"

INSTRUMENTATION

3/4.3.3 MONITORING INSTRUMENTATION

RADIATION MONITORING INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.1 The radiation monitoring instrumentation channels shown in Table 3.3-6 shall be OPERABLE with their alarm/trip setpoints within the specified limits.*

APPLICABILITY: As shown in Table 3.3-6.

ACTION:

a. With a radiation monitoring channel alarm /trip setpoint exceeding the value shown in Table 3.3-6, adjust the setpoint to within the limit within 4 hours or declare the channel inoperable.

b. With one or more radiation monitoring channels inoperable, take the ACTION shown in Table 3.3-6.

c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.1 Each radiation monitoring instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST operations for the MODES and at the frequencies shown in Table 4.3-3.

*Continuous monitoring and sampling of the containment purge exhaust directly from the purge stack shall be provided for the low and high volume (8-inch and 42-inch) containment purge prior to startup following the first refueling outage. Containment airborne monitor 3RT-7804-1 or 3RT-7807-2 and associated sampling media shall perform these functions prior to initial criticality. From initial criticality to the startup following the first refueling outage containment airborne monitor 3RT-7804-1 and associated sampling media shall perform the above required functions.

TABLE 3.3-6

RADIATION MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ALARM/TRIP SETPOINT	MEASUREMENT RANGE	ACTION
1. Area Monitors					
a. Containment - High Range (3RT-7820-1 and 3RT-7820-2	2	1, 2, 3	10 R/hr	$1-10^8$ R/hr	18, 18a
		4	10 R/hr		19
b. Containment - Purge Isolation (3RT-7856-1 or 3RT-7857-2)	1	1, 2, 3, 4	#	$10^{-1}-10^5$ mR/hr	17
		6	#		17b
c. Main Steam Line A channel consists of 3RT-7874A and 3RT-7875A or 3RT-7874B and 3RT-7875B	1/line	1, 2, 3	1 mR/hr (low); 1 R/hr (high)	$10^{-1}-10^4$ mR/hr;	18
		4	1 mR/hr (low); 1 R/hr (high)		19
2. Process Monitors					
a. Fuel Storage Pool Airborne (3RT-7822-1 or 3RT-7823-2)					
i. Gaseous	1	*	#	$10^1 - 10^7$ cpm	16
ii. Particulate/Iodine	1	*	#	$10^1 - 10^7$ cpm	16
b. Containment Airborne (3RT-7804-1 or 3RT-7807-2)					
i. Gaseous	1	1,2,3,4	#	$10^1 - 10^7$ cpm	17a
		6	#		17b
ii. Particulate	1	1,2,3,4	#	$10^1 - 10^7$ cpm	17a
		6	#		17b
iii. Iodine	1	6	#	$10^1 - 10^7$ cpm	17b
c. Control Room Airborne (2/3 RT-7824-1 or 2/3 RT-7825-2)					
i. Particulate/Iodine	1	All	#	$10^1 - 10^7$ cpm	13
ii. Gaseous	1	All	#	$10^1 - 10^7$ cpm	13

TABLE 3.3-6 (Continued)

RADIATION MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ALARM/TRIP SETPOINT	MEASUREMENT RANGE	ACTION
3. Noble Gas Monitors					
a. Plant Vent Stack					
Wide Range(2RT-7865-1 or 3RT-7865-1)	1	1,2,3	Per ODCM	10^{-7}-10^{5} uCi/cm3	19
Normal Range(2/3RT-7808 or 2RT-7865-1 or 3RT-7865-1)	1	4	Per ODCM	10^{-6}-10^{-1}uCi/cm^3	19
b. Condenser Evacuation System					
Wide Range(3RT-7870-1)	1	1,2,3(1)	Per ODCM	10^{-7}-10^{5}uCi/cm^3	19
Normal Range(3RT-7818 or 3RT-7870-1)	1	4 (1)	Per ODCM	10^{-6}-10^{2}uCi/cm^3	19

(1) With any main steam line isolation valve and/or any main steam isolating valve bypass valve not fully closed.

TABLE 3.3-6 (Continued)

ACTION STATEMENTS

ACTION 13 - With the number of channels OPERABLE less than required by the minimum channels OPERABLE requirement, within 1 hour initiate and maintain operation of the control room emergency air cleanup system in the emergency (except as required by ACTIONS 14, 15) mode of operation.

ACTION 16 - With the number of channels OPERABLE less than required by the minimum channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.9.12.

ACTION 17 - With the number of channels OPERABLE less than required by the minimum channels OPERABLE requirement, operation may continue provided that the purge valves are maintained closed.

ACTION 17a - With the number of channels OPERABLE less than required by the minimum channels OPERABLE requirement, comply with the ACTION requirements of Specification 3.4.5.1. (Mode 1, 2, 3, 4 only)

ACTION 17b - With the number of channels OPERABLE less than required by the minimum channels OPERABLE requirement, close each of the containment purge penetrations providing direct access from the containment atmosphere to the outside atmosphere.

ACTION 18 - With the number of channels OPERABLE one less than Minimum Channels OPERABLE requirement, either restore the inoperable channel to OPERABLE status within 30 days, or be in HOT SHUTDOWN within the next 12 hours.

ACTION 18a - With both channels inoperable, restore the inoperable channel(s) to OPERABLE status within 48 hours, or be in HOT SHUTDOWN within the next 12 hours.

ACTION 19 - With the number of OPERABLE Channels less than required by the Minimum Channels OPERABLE requirement, either restore the inoperable Channel(s) to OPERABLE status within 72 Hours, or:

1) Initiate the preplanned and alternate method of monitoring the appropriate parameter(s), and

2) Prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within 14 days following initiation of the pre-planned alternate outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the system to OPERABLE status.

#In accordance with Engineered Safety Feature trip value specified by Table 3.3-4

* With irradiated fuel in the storage pool.

ACTIONS 13, 16, 17, 17a and 17b are repeated from Table 3.3-3 for reference.

TABLE 4.3-3

RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
1. Area Monitors				
a. Containment - High Range (3RT-7820-1, 3RT-7820-2)	S	R	M	1, 2, 3, 4
b. Containment - Purge Isolation (3RT-7856-1, 3RT-7857-2)	S	R	M	1, 2, 3, 4,6
c. Main Steam Line (3RT-7874A, 3RT-7875A, 3RT-7874B, 3RT-7875B)	S	R	M	1, 2, 3, 4
2. Process Monitors				
a. Fuel Storage Pool Airborne (3RT-7822-1, 3RT-7823-2)				
i. Gaseous	#	#	#	*
ii. Particulate/Iodine	#	#	#	*
b. Containment Airborne (3RT-7804-1, 3RT-7807-2)				
i. Gaseous	#	#	#	1,2,3,4,6
ii. Particulate	#	#	#	1,2,3,4,6
iii. Iodine	#	#	#	6
c. Control Room Airborne (2/3RT-7824-1, 2/3RT-7825-2)				
i. Particulate	#	#	#	All
ii. Gaseous	#	#	#	All

TABLE 4.3-3

RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
PROCESS MONITORS (Continued)				
3. Noble Gas Monitors				
a. Plant Vent Stack (2/3 RT-7808, 2RT-7865-1,3RT-7865-1)	D	R	Q	1,2,3,4
b. Condenser Evacuation System (3RT-7818, 3RT-7870-1)	D	R	Q	1,2,3,4 (1)

NOTES:

#In accordance with Table 4.3-2 surveillance requirements for these instrument channels.

*With irradiated fuel in the storage pool.

(1) With any main steam isolation valve and/or any main steam isolating valve bypass valve not fully closed.

DESCRIPTION OF PROPOSED CHANGES NPF-10-101 AND NPF-15-101
AND SAFETY ANALYSIS

This is a request to revise Technical Specification 3.3.3.6, ACCIDENT MONITORING INSTRUMENTATION.

EXISTING SPECIFICATIONS

Unit 2: See Attachment "A"

Unit 3: See Attachment "C"

PROPOSED SPECIFICATIONS

Unit 2: See Attachment "B"

Unit 3: See Attachment "D"

DESCRIPTION

The proposed change is required to clarify the technical specification requirements for radiation monitoring instrumentation and to improve consistency with the Standard Technical Specifications (STS) and other technical specifications and proposed changes.

The proposed change deletes from Specification 3.3.3.6 those radiation monitors listed in Table 3.3-10 as items 19, 20, 21 and 22. These wide range radiation monitors were installed to satisfy NUREG-0737 requirements. Consistent with STS, the requirements for these wide range monitors are more appropriately delineated in Specification 3.3.3.1, RADIATION MONITORING INSTRUMENTATION. Another proposed change (NPF-10-100 and NPF-15-100) implement the requirements for these monitors in Specification 3.3.3.1. The consolidation of the requirements for the NUREG-0737 monitors in Specification 3.3.3.1 will reduce the complexity of the technical specifications while preserving the operability requirements.

SAFETY ANALYSIS

The proposed change discussed above shall be deemed to involve a significant hazards consideration if there is a positive finding in any one of the following areas:

1. Will operation of the facility in accordance with this proposed change involve a significant increase in the probability or consequences of any accident previously evaluated.

   Response: No

   The proposed change does not alter the technical specification requirements for wide range radiation monitoring instrumentation. It supports a proposed change to consolidate radiation monitoring instrumentation operability requirements in Specification 3.3.3.1. The wide range radiation monitoring instrumentation affected by the proposed change is not credited in the mitigation of any previously evaluated accident. Therefore, the proposed change does not affect the probability or consequences of any previously evaluated accident.

2. Will operation of the facility in accordance with this proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

   Response: No

   As stated above, the proposed change supports editorial consolidation of radiation monitoring requirements within the technical specifications. The proposed change does not affect the configuration or operation of the plant. It therefore does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Will operation of the facility in accordance with the proposed change involve a significant reduction in a margin of safety?

   Response: No

   The proposed change is editorial in nature supporting the consolidation of technical specification radiation monitoring instrumentation requirements. The consequences of any previously evaluated accident remain unaffected by the proposed change. Therefore, no margin of safety is reduced.

The proposed consolidation of technical specification radiation monitoring instrumentation requirements is similar to example (i) of amendments not likely to involve a significant hazards consideration published in 48 FR 14864 dated April 6, 1983 in that it is essentially administrative in nature.

SAFETY AND SIGNIFICANT HAZARDS DETERMINATION

Based on the above Safety Analysis, it is concluded that: (1) the proposed change does not constitute a significant hazards consideration as defined by 10 CFR 50.92; and (2) there is reasonable assurance that the health and safety of the public will not be endangered by the proposed change; and (3) this action will not result in a condition which significantly alters the impact of the station on the environment as described in the NRC Final Environmental Statement.

PWS:0162F

ATTACHMENT "A"

INSTRUMENTATION

ACCIDENT MONITORING INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.6 The accident monitoring instrumentation channels shown in Table 3.3-10 shall be OPERABLE.

APPLICABILITY: MODES 1, 2 and 3.*

ACTION:

a. With one or more radiation monitoring alarm channels inoperable, take the ACTION shown in Table 3.3-10.

b. The provisions of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.6 Each accident monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3-7.

*See Special Test Exception 3.10.5.

TABLE 3.3

ACCIDENT MONITORING INSTRUMENTATION

INSTRUMENT	REQUIRED NUMBER OF CHANNELS	MINIMUM CHANNELS OPERABLE	ACTION
1. Containment Pressure - Narrow Range	2	1	20, 21
2. Containment Pressure - Wide Range	2	1	20, 21
3. Reactor Coolant Outlet Temperature - T_{Hot} (Wide Range)	2	1	20, 21
4. Reactor Coolant Inlet Temperature - T_{Cold} (Wide Range)	2	1	20, 21
5. Pressurizer Pressure - Wide Range	2	1	20, 21
6. Pressurizer Water Level	2	1	20, 21
7. Steam Line Pressure	2/steam generator	1/steam generator	20, 21
8. Steam Generator Water Level - Wide Range	2/steam generator	1/steam generator	20, 21
9. Refueling Water Storage Tank Water Level	2	1	20, 21
10. Auxiliary Feedwater Flow Rate	1/steam generator	N.A.	20
11. Reactor Coolant System Subcooling Margin Monitor	2	1	20, 21
12. Safety Valve Position Indicator	1/valve	N.A.	20
13. Spray System Pressure	2	1	20, 21
14. LPSI Header Temperature	2	1	20, 21
15. Containment Temperature	2	1	20, 21
16. Containment Water Level - Narrow Range	2	1	20, 21

TABLE 3.3

ACCIDENT MONITORING INSTRUMENTATION (CONTINUED)

INSTRUMENT		REQUIRED NUMBER OF CHANNELS	MINIMUM CHANNELS OPERABLE	ACTION
17.	Containment Water Level - Wide Range	2	1	20, 21
18.	Core Exit Thermocouples	7/core quadrant	4/core quadrant	20, 21
19.	Containment Area Radiation - High Range	2	1	20, 21
20.	Main Steam Line Area Radiation	1/steam line	N.A.	20
21.	Condenser Evacuation System Radiation Monitor - Wide Range	1	N.A.	20
22.	Purge/Vent Stack Radiation Monitor - Wide Range*	2	1	22
23.	Cold Leg HPSI Flow	1/cold leg	N.A.	20
24.	Hot Leg HPSI Flow	1/hot leg	N.A.	20

NOTES:

*The two required channels are the Unit 2 monitor and the Unit 3 monitor.

MAY 16 1983
AMENDMENT NO. 16

TABLE 3.3-10 (Continued)

ACTION STATEMENTS

ACTION 20 - With the number of OPERABLE accident monitoring channels less than the Required Number of Channels, either restore the inoperable channel to OPERABLE status within 7 days, or be in HOT SHUTDOWN within the next 12 hours.

ACTION 21 - With the number of OPERABLE accident monitoring channels less than the Minimum Channels OPERABLE requirement, either restore the inoperable channel(s) to OPERABLE status within 48 hours or be in at least HOT SHUTDOWN within the next 12 hours.

ACTION 22 - With the number of OPERABLE accident monitoring channels less than the Required Number of Channels, either restore the inoperable channel(s) to OPERABLE status within 72 hours, or:

1) Initiate the preplanned alternate method of monitoring the appropriate parameter(s), and

2) Prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within 14 days following the event outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the system to OPERABLE status.

TABLE 4.3-7

ACCIDENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION
1. Containment Pressure - Narrow Range	M	R
2. Containment Pressure - Wide Range	M	R
3. Reactor Coolant Outlet Temperature - T_{Hot} (Wide Range)	M	R
4. Reactor Coolant Inlet Temperature - T_{Cold} (Wide Range)	M	R
5. Pressurizer Pressure (Wide Range)	M	R
6. Pressurizer Water Level	M	R
7. Steam Line Pressure	M	R
8. Steam Generator Water Level (Wide Range)	M	R
9. Refueling Water Storage Tank Water Level	M	R
10. Auxiliary Feedwater Flow Rate	M	R
11. Reactor Coolant System Subcooling Margin Monitor	M	R
12. Safety Valve Position Indicator	M	R
13. Spray System Pressure	M	R
14. LPSI Header Temperature	M	R
15. Containment Temperature	M	R
16. Containment Water Level (Narrow Range)	M	R
17. Containment Water Level (Wide Range)	M	R
18. Core Exit Thermocouples	M	R

TABLE 4.3-7

ACCIDENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS (CONTINUED)

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION
19. Containment Area Radiation - High Range	(a)	(a)
20. Main Steam Line Area Radiation	(a)	(a)
21. Condenser Evacuation System Radiation Monitor - Wide Range	M	R
22. Purge/Vent Stack Radiation Monitor - Wide Range	M	R
23. Cold Leg HPSI Flow	M	R
24. Hot Leg HPSI Flow	M	R

NOTES:

(a) In accordance with Table 4.3-3.

ATTACHMENT "B"

ACCIDENT MONITORING INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.6 The accident monitoring instrumentation channels shown in Table 3.3-10 shall be OPERABLE.

APPLICABILITY: MODES 1, 2 and 3.*

ACTION:

a. With one or more accident monitoring channels inoperable, take the ACTION shown in Table 3.3-10.

b. The provisions of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.6 Each accident monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3-7.

*See Special Test Exception 3.10.5.

TABLE 3.3

ACCIDENT MONITORING INSTRUMENTATION

INSTRUMENT	REQUIRED NUMBER OF CHANNELS	MINIMUM CHANNELS OPERABLE	ACTION
1. Containment Pressure - Narrow Range	2	1	20, 21
2. Containment Pressure - Wide Range	2	1	20, 21
3. Reactor Coolant Outlet Temperature - T_{Hot} (Wide Range)	2	1	20, 21
4. Reactor Coolant Inlet Temperature - T_{Cold} (Wide Range)	2	1	20, 21
5. Pressurizer Pressure - Wide Range	2	1	20, 21
6. Pressurizer Water Level	2	1	20, 21
7. Steam Line Pressure	2/steam generator	1/steam generator	20, 21
8. Steam Generator Water Level - Wide Range	2/steam generator	1/steam generator	20, 21
9. Refueling Water Storage Tank Water Level	2	1	20, 21
10. Auxiliary Feedwater Flow Rate	1/steam generator	N.A.	20
11. Reactor Coolant System Subcooling Margin Monitor	2	1	20, 21
12. Safety Valve Position Indicator	1/valve	N.A.	20
13. Spray System Pressure	2	1	20, 21
14. LPSI Header Temperature	2	1	20, 21
15. Containment Temperature	2	1	20, 21
16. Containment Water Level - Narrow Range	2	1	20, 21

TABLE 3.3

ACCIDENT MONITORING INSTRUMENTATION (CONTINUED)

INSTRUMENT	REQUIRED NUMBER OF CHANNELS	MINIMUM CHANNELS OPERABLE	ACTION
17. Containment Water Level - Wide Range	2	1	20, 21
18. Core Exit Thermocouples	7/core quadrant	4/core quadrant	20, 21
19. Cold Leg HPSI Flow	1/cold leg	N.A.	20
20. Hot Leg HPSI Flow	1/hot leg	N.A.	20

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TABLE 3.3-10 (Continued)

ACTION STATEMENTS

ACTION 20 - With the number of OPERABLE accident monitoring channels less than the Required Number of Channels, either restore the inoperable channel to OPERABLE status within 7 days, or be in HOT SHUTDOWN within the next 12 hours.

ACTION 21 - With the number of OPERABLE accident monitoring channels less than the Minimum Channels OPERABLE requirement, either restore the inoperable channel(s) to OPERABLE status within 48 hours or be in at least HOT SHUTDOWN within the next 12 hours.

TABLE 4.3-7

ACCIDENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION
1. Containment Pressure - Narrow Range	M	R
2. Containment Pressure - Wide Range	M	R
3. Reactor Coolant Outlet Temperature - T_{Hot} (Wide Range)	M	R
4. Reactor Coolant Inlet Temperature - T_{Cold} (Wide Range)	M	R
5. Pressurizer Pressure (Wide Range)	M	R
6. Pressurizer Water Level	M	R
7. Steam Line Pressure	M	R
8. Steam Generator Water Level (Wide Range)	M	R
9. Refueling Water Storage Tank Water Level	M	R
10. Auxiliary Feedwater Flow Rate	M	R
11. Reactor Coolant System Subcooling Margin Monitor	M	R
12. Safety Valve Position Indicator	M	R
13. Spray System Pressure	M	R
14. LPSI Header Temperature	M	R
15. Containment Temperature	M	R
16. Containment Water Level (Narrow Range)	M	R
17. Containment Water Level (Wide Range)	M	R
18. Core Exit Thermocouples	M	R

TABLE 4.3-7

ACCIDENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS (CONTINUED)

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION
19. Cold Leg HPSI Flow	M	R
20. Hot Leg HPSI Flow	M	R

ATTACHMENT "C"

ACCIDENT MONITORING INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.6 The accident monitoring instrumentation channels shown in Table 3.3-10 shall be OPERABLE.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

a. With one or more radiation monitoring channels inoperable, take the ACTION shown in Table 3.3-10.

b. The provisions of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.6 Each accident monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3-7.

TABLE 3.3-10

ACCIDENT MONITORING INSTRUMENTATION

INSTRUMENT	REQUIRED NUMBER OF CHANNELS	MINIMUM CHANNELS OPERABLE	ACTION
1. Containment Pressure - Narrow Range	2	1	20, 21
2. Containment Pressure - Wide Range	2	1	20, 21
3. Reactor Coolant Outlet Temperature - T_{Hot} (Wide Range)	2	1	20, 21
4. Reactor Coolant Inlet Temperature - T_{Cold} (Wide Range)	2	1	20, 21
5. Pressurizer Pressure - Wide Range	2	1	20, 21
6. Pressurizer Water Level	2	1	20, 21
7. Steam Line Pressure	2/steam generator	1/steam generator	20, 21
8. Steam Generator Water Level - Wide Range	2/steam generator	1/steam generator	20, 21
9. Refueling Water Storage Tank Water Level	2	1	20, 21
10. Auxiliary Feedwater Flow Rate	1/steam generator	N.A.	20
11. Reactor Coolant System Subcooling Margin Monitor	2	1	20, 21
12. Safety Valve Position Indicator	1/valve	N.A.	20
13. Spray System Pressure	2	1	20, 21
14. LPSI Header Temperature	2	1	20, 21
15. Containment Temperature	2	1	20, 21
16. Containment Water Level - Narrow Range	2	1	20, 21
17. Containment Water Level - Wide Range	2	1	20, 21
18. Core Exit Thermocouples	7/core quadrant	4/core quadrant	20, 21

TABLE 3.3-10

ACCIDENT MONITORING INSTRUMENTATION (CONTINUED)

INSTRUMENT	REQUIRED NUMBER OF CHANNELS	MINIMUM CHANNELS OPERABLE	ACTION
19. Containment Area Radiation - High Range	2	1	20, 21
20. Main Steam Line Area Radiation	1/steam line	N.A.	20
21. Condenser Evacuation System Radiation Monitor - Wide Range	1	N.A.	20
22. Purge/Vent Stack Radiation Monitor - Wide Range*	2	1	22
23. Cold Leg HPSI Flow	1/cold leg	N.A.	20
24. Hot Leg HPSI Flow	1/hot leg	N.A.	20

NOTES:

*The two required channels are the Unit 2 monitor and the Unit 3 monitor.

TABLE 3.3-10 (Continued)

ACTION STATEMENTS

ACTION 20 - With the number of OPERABLE accident monitoring channels less than the Required Number of Channels, either restore the inoperable channel to OPERABLE status within 7 days, or be in HOT SHUTDOWN within the next 12 hours.

ACTION 21 - With the number of OPERABLE accident monitoring channels less than the Minimum Channels OPERABLE requirement, either restore the inoperable channel(s) to OPERABLE status within 48 hours or be in at least HOT SHUTDOWN within the next 12 hours.

ACTION 22 - With the number of OPERABLE accident monitoring channels less than the Required Number of Channels, either restore the inoperable channel(s) to OPERABLE status within 72 hours, or:

1) Initiate the preplanned alternate method of monitoring the appropriate parameter(s), and

2) Prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within 14 days following the event outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the system to OPERABLE status.

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TABLE 4.3-7

ACCIDENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION
1. Containment Pressure - Narrow Range	M	R
2. Containment Pressure - Wide Range	M	R
3. Reactor Coolant Outlet Temperature - T_{Hot} (Wide Range)	M	R
4. Reactor Coolant Inlet Temperature -T_{Cold} (Wide Range)	M	R
5. Pressurizer Pressure (Wide Range)	M	R
6. Pressurizer Water Level	M	R
7. Steam Line Pressure	M	R
8. Steam Generator Water Level (Wide Range)	M	R
9. Refueling Water Storage Tank Water Level	M	R
10. Auxiliary Feedwater Flow Rate	M	R
11. Reactor Coolant System Subcooling Margin Monitor	M	R
12. Safety Valve Position Indicator	M	R
13. Spray System Pressure	M	R
14. LPSI Header Temperature	M	R
15. Containment Temperature	M	R
16. Containment Water Level (Narrow Range)	M	R
17. Containment Water Level (Wide Range)	M	R
18. Core Exit Thermocouples	M	R

TABLE 4.3-7

ACCIDENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS (CONTINUED)

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION
19. Containment Area Radiation - High Range	(a)	(a)
20. Main Steam Line Area Radiation	(a)	(a)
21. Condenser Evacuation System Radiation Monitor - Wide Range	M	R
22. Purge/Vent Stack Radiation Monitor - Wide Range	M	R
23. Cold Leg HPSI Flow	M	R
24. Hot Leg HPSI Flow	M	R

NOTES:

(a) In accordance with Table 4.3-3.

ATTACHMENT "D"

INSTRUMENTATION

ACCIDENT MONITORING INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.6 The accident monitoring instrumentation channels shown in Table 3.3-10 shall be OPERABLE.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

a. With one or more accident monitoring channels inoperable, take the ACTION shown in Table 3.3-10.

b. The provisions of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.6 Each accident monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3-7.

TABLE 3.3-10

ACCIDENT MONITORING INSTRUMENTATION

INSTRUMENT	REQUIRED NUMBER OF CHANNELS	MINIMUM CHANNELS OPERABLE	ACTION
1. Containment Pressure - Narrow Range	2	1	20, 21
2. Containment Pressure - Wide Range	2	1	20, 21
3. Reactor Coolant Outlet Temperature - T_{Hot} (Wide Range)	2	1	20, 21
4. Reactor Coolant Inlet Temperature - T_{Cold} (Wide Range)	2	1	20, 21
5. Pressurizer Pressure - Wide Range	2	1	20, 21
6. Pressurizer Water Level	2	1	20, 21
7. Steam Line Pressure	2/steam generator	1/steam generator	20, 21
8. Steam Generator Water Level - Wide Range	2/steam generator	1/steam generator	20, 21
9. Refueling Water Storage Tank Water Level	2	1	20, 21
10. Auxiliary Feedwater Flow Rate	1/steam generator	N.A.	20
11. Reactor Coolant System Subcooling Margin Monitor	2	1	20, 21
12. Safety Valve Position Indicator	1/valve	N.A.	20
13. Spray System Pressure	2	1	20, 21
14. LPSI Header Temperature	2	1	20, 21
15. Containment Temperature	2	1	20, 21
16. Containment Water Level - Narrow Range	2	1	20, 21
17. Containment Water Level - Wide Range	2	1	20, 21
18. Core Exit Thermocouples	7/core quadrant	4/core quadrant	20, 21

TABLE 3.3-10

ACCIDENT MONITORING INSTRUMENTATION (CONTINUED)

INSTRUMENT	REQUIRED NUMBER OF CHANNELS	MINIMUM CHANNELS OPERABLE	ACTION
19. Cold Leg HPSI Flow	1/cold leg	N.A.	20
20. Hot Leg HPSI Flow	1/hot leg	N.A.	20

TABLE 3.3-10 (Continued)

ACTION STATEMENTS

ACTION 20 - With the number of OPERABLE accident monitoring channels less than the Required Number of Channels, either restore the inoperable channel to OPERABLE status within 7 days, or be in HOT SHUTDOWN within the next 12 hours.

ACTION 21 - With the number of OPERABLE accident monitoring channels less than the Minimum Channels OPERABLE requirement, either restore the inoperable channel(s) to OPERABLE status within 48 hours or be in at least HOT SHUTDOWN within the next 12 hours.

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TABLE 4.3-7

ACCIDENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION
1. Containment Pressure - Narrow Range	M	R
2. Containment Pressure - Wide Range	M	R
3. Reactor Coolant Outlet Temperature - T_{Hot} (Wide Range)	M	R
4. Reactor Coolant Inlet Temperature -T_{Cold} (Wide Range)	M	R
5. Pressurizer Pressure (Wide Range)	M	R
6. Pressurizer Water Level	M	R
7. Steam Line Pressure	M	R
8. Steam Generator Water Level (Wide Range)	M	R
9. Refueling Water Storage Tank Water Level	M	R
10. Auxiliary Feedwater Flow Rate	M	R
11. Reactor Coolant System Subcooling Margin Monitor	M	R
12. Safety Valve Position Indicator	M	R
13. Spray System Pressure	M	R
14. LPSI Header Temperature	M	R
15. Containment Temperature	M	R
16. Containment Water Level (Narrow Range)	M	R
17. Containment Water Level (Wide Range)	M	R
18. Core Exit Thermocouples	M	R

TABLE 4.3-7

ACCIDENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS (CONTINUED)

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION
19. Cold Leg HPSI Flow	M	R
20. Hot Leg HPSI Flow	M	R

DESCRIPTION OF PROPOSED CHANGES
NPF-10-102 AND NPF-15-102
AND SAFETY ANALYSIS

This is a request to revise Technical Specification 3/4.3.3.9, Radioactive Gaseous Effluent Monitoring Instrumentation.

Existing Specifications

Unit 2: See Attachment "A"
Unit 3: See Attachment "C"

Proposed Specifications

Unit 2: See Attachment "B"
Unit 3: See Attachment "D"

Description

The proposed change is required to clarify the technical specification requirements for radioactive gaseous effluent monitoring instrumentation. The proposed change increases operating flexibility by crediting recent and near future design changes (when they are implemented). It makes editorial changes reflecting changes proposed by the NRC staff in the draft revision of NUREG 0472, Standard Radiological Effluent Technical Specifications. Editorial changes are also made within the individual ACTION statements to ensure consistency with the general ACTION provisions of Specification 3.3.3.9. Cross referencing to other specifications not relating to effluent monitoring and the applicability for condenser evacuation system effluent monitoring are revised to be consistent with actual design and FSAR commitments. Other editorial changes are made to improve consistency with the actual plant configuration and operation.

The following revisions are made to Specification 3/4.3.3.9 and its associated Tables 3.3-13 and 4.3-9:

1. The terminology for flow rate measuring devices for each instrument is revised for clarity.

2. A design change has provided automatic closure of the waste gas decay tank isolation valves by the plant vent stack wide range gaseous effluent monitors (2 or 3 RT-7865-1). Item 1a is revised to take credit for this design feature. The plant vent stacks are the final release points for the waste gas system. As a minimum, the proposed change requires only one of the two wide range plant vent stack monitors to be operable. Each unit's plant vent stack is monitored by the wide range plant vent stack monitor associated with that unit. The Unit 2 and Unit 3 plant vent stacks are fed from a common plenum. Exhaust from one unit's vent stack

is representative of exhaust from the other unit's. Data has been accumulated during plant operation to date to correlate the release from one unit's vent stack to the readings obtained from the other unit's vent stack monitor. This correlation enables a representative determination of releases from one unit's vent stack from readings taken from the other unit's vent stack monitor. A minimum of one plant vent stack wide range monitor will effectively monitor and terminate releases from the Waste Gas Holdup System.

The proposed change deletes 2/3 RT-7814 from satisfying the waste gas holdup system noble gas monitoring requirement (Item 1a). This monitor is no longer required to satisfy this function because: (1) a plant vent stack noble gas monitor is always required to be operable by Item 4a; (2) the plant vent stack monitors all provide automatic termination of waste gas hold up system releases; and (3) the plant vent stacks are the final release point for waste gas holdup system releases.

The statement "otherwise suspend release of radioactive effluents via this pathway" is deleted from ACTION 35 which applies to waste gas holdup system noble gas monitoring, to make it consistent with the other gaseous effluent monitoring ACTIONS. This requirement is implicit with failure to meet any gaseous effluent monitoring LCO and ACTION. Calling it out specifically for ACTION 28 only confuses the action to be taken when other gaseous effluent monitoring LCO's and ACTIONS are not met.

3. ACTION 39 is invoked when one or more channels of waste gas holdup system explosive gas monitoring instrumentation is inoperable. Two hydrogen and two oxygen analyzers are provided. One of each is a continuous analyzer, the others are periodic. The continuous hydrogen and oxygen analyzers monitor the waste gas surge tank (waste gas compressor inlet). The periodic analyzers can be aligned to either the surge tank or the waste gas decay tank of interest. The surge tank is of greater interest from the standpoint of preventing explosive gas mixtures in the decay tanks. Because the decay tanks are operated above atmospheric pressure, thereby preventing oxygen inleakage, an explosive gas mixture cannot exist in the decay tanks unless one existed in the surge tank before compression. ACTION 39 assumes that both sets of analyzers are aligned to the surge tank. Should a continuous analyzer on the surge tank become inoperable ACTION 39 currently does not require alignment of the periodic analyzer to the surge tank. Operation of the waste gas houldup system could continue in compliance with ACTION 39 with the surge tank un-monitored. The proposed revision of ACTION 39 resolves this by requiring the remaining operable analyzer channel to be aligned to the waste gas surge tank.

The operability requirements for hydrogen and oxygen analyzers and ACTION 39 are intended to maintain compliance with Specification 3/4.11.2.5, Explosive Gas Mixture. ACTION 39 requires a plant shutdown should both channels of the hydrogen or the oxygen analyzers are inoperable. This is inconsistent with Specification 3/4.11.2.5 and the

requirements of general ACTION "c" of Specification 3/4.3.3.9 neither of which require a plant shutdown even if an explosive gas mixture exists, since they are both 3.0.3 exempt. Therefore in lieu of plant shutdown when both channels are inoperable, ACTION 39 is revised to require grab samples at least once per four hours with analysis within the next four hours to verify compliance with Specification 3/4.11.2.5 and provide adequate assurance that an explosive gas mixture does not exist.

4. Item 4, Plant Vent Stack, is revised to indicate that either the Unit 2 or the Unit 3 vent stack wide range monitors can be used to quantify total plant vent stack releases. As stated above, the Unit 2 and 3 plant vent stacks are fed from a common plenum. Data has been accumulated during plant operation to date to correlate the release from one unit's plant vent stack to the readings obtained from the other unit's vent stack monitor. This correlation enables a representative determination of total plant vent stack releases based on readings from one unit's plant vent stack monitor.

5. The applicability for Item 6, Condenser Evacuation System Monitor, is revised from "all MODES" to "MODES 1-4 with any main steam isolation valve (MSIV) and/or any main steam isolating valve bypass valve not fully closed". The condenser evaucation system is monitored because it is a potential radioactive gaseous release pathway. Primary to secondary leakage is the only source of gaseous acivity which could be potentially released via this pathway. When the MSIV's and MSIV bypass valves are fully closed, this pathway is isolated from the source and, therefore, is not required to be monitored.

6. Item 5, Containment Purge System, is revised to reflect the future addition of a dedicated purge effluent monitor. Installation of a dedicated purge effluent monitor for each unit is required by Units 2 and 3 License Conditions 2(C)17 and 2(C)15, respectively. Notes have been added to indicate which monitors are credited with providing the Item 5 functions before and after the design changes have been implemented. The plant vent stack wide range monitors (RT-7865-1) may, in the future, be equipped to automatically terminate purge releases from their associated unit. The proposed change would recognize the plant vent stack wide range monitors as satisfying the purge effluent monitoring requirements if this design feature is added. ACTION 38 is also revised to provide additional flexibility. As previous submittals have exemplified, reliance on a single monitor for the purge effluent monitoring function has been operationally limiting. Most recently, proposed change NPF-10-87 was submitted to allow the use of the plant vent stack monitor (RT-7865-1) to be used to monitor purge effluent in the event that the containment airborne monitor (RT-7804-1), which currently serves this function, is inoperable. Discussions with the staff raised concerns with NPF-10-87 relating to the action to be taken if a high radiation alarm is received on the other unit's vent stack monitor. This revision to ACTION 38 addresses this staff concern and supercedes the previous submittal. This use of the plant vent stack monitor is viewed as a temporary backup (unless provided with the ability to automatically terminate containment purge) until the dedicated purge effluent monitor is installed.

7. Table 4.3-9 is revised to reflect that channel checks are not required for iodine and particulate samplers. The iodine and particulate samplers are fixed cannisters which are removed weekly in accordance with Specification 4.11.2.1.2, Table 4.11-2, Item D. Channel checks are not appropriate for these samplers and this requirement is deleted from Items 3, 4 and 5 of Table 4.3-9. The surveillance intervals for Item 5 - Containment Purge Noble Gas Activity monitor are revised to be consistent with the Standard Radiological and Effluent Technical Specifications. The current requirements for channel checks each shift and monthly channel functional checks reflect that the containment purge monitoring function is currently performed by an ESFAS monitor. These requirements will still continue to be applied to the ESFAS monitor by Specification 3.3.2. However, when the dedicated purge effluent monitor is installed the effluent monitoring surveillance requirements will apply to it.

8. Table 3.3-13, ACTIONs 35, 36, 37, 38, 39 and 40 limit the period of their compensatory measures to a fixed number of days. However, this is inconsistent with the general ACTION c of Specification 3.3.3.9 which exempts Specifications 3.0.3, 3.0.4 and 6.9.1.13b. With these exemptions, no additional ACTIONs are prescribed when the time limit expires except as provided by general ACTION b. Appropriately, the compensatory measures provided by the ACTIONs may therefore continue until the full provisions of the LCO again are met. Accordingly, the proposed change removes the time limits from ACTIONs 35, 36, 37, 38, 39 and 40. However, SCE fully intends to maintain radioactive effluent monitoring instrumentation in a high state of availability and considers that the burden of compliance with the ACTION requirements provides sufficient encouragement to restore inoperable instruments to operable status in a timely fashion. It is in SCE's best interests to do so. However, there may be circumstances where it may not be possible to restore an inoperable channel to operable status within 30 days. In the event an instrument remains inoperable for greater than thirty days, the reasons why it was not restored in a timely manner will continue to be reported in the semiannual Radioactive Effluent Release Report as required by general ACTION "b." General ACTION "b" is revised to clarify this requirement.

9. With the required sample and/or process flow instrumentation inoperable, ACTION 36 allows effluent releases to continue provided that flow is estimated at least once per 4 hours. ACTION 36 does not specify means by which flow can be estimated. The proposed change revises ACTION 36 to recognize that system design characteristics may be used to estimate flow. If system design characteristics, which are not subject to rapid change, are used to estimate flow, then it is not necessary to estimate flow at 4 hour intervals. The proposed change revises the interval for flow estimation to at least once per 8 hours.

10. ACTION 37 currently provides for grab samples to be taken at 8 hour intervals. Consistent with NUREG 0472 Draft, Revision 3, this interval is increased to 12 hours.

11. The Table 3.3-13 notes cross reference to other specifications relating to other functional requirements for instruments which also serve functions other than effluent monitoring. These references are removed because the functions referred to are specified elsewhere. Only effluent monitoring requirements should appear in this specification.

These revisions will serve to clarify the technical specification requirements for effluent monitoring instrumentation, increase flexibility and improve consistency with the standard Technical Specifications.

Safety Analysis

The proposed change discussed above shall be deemed to involve a significant hazards consideration if there is a positive finding in any one of the following areas:

1. Will operation of the facility in accordance with this proposed change involve a significant increase in the probability or consequences of any accident previously evaluated?

   Response: No

   Description Items 1, 7, 8, 9, 10 and 11 above are editorial in nature and have no impact on the probability or consequences of previously analyzed accidents. The proposed changes described in Items 2 and 4 above recognizes the fact that total effluent releases from Units 2 and 3 plant vent stacks, which are fed from a common plenum, can be quantified by the wide range gaseous effluent monitor on one unit's vent stack. This change is supported by data accumulated in operation to date. While this change represents a reduction requirement for effluent monitoring instrumentation, the affected effluent monitoring instrumentation neither contributes to the occurrence of nor is credited in the mitigation of any previously evaluated accident. Therefore, this change does not affect the probability or consequences of any previously evaluated accident.

   The proposed change to ACTION 39 described in Item 3 above removes the requirement for plant shutdown if more than one channel of waste gas holdup system explosive gas monitoring is inoperable. As a compensatory measure, the revised ACTION 39 requires frequent analysis of grab samples to preclude the existence of potentially explosive gas concentrations. This compensatory measure provides assurance that this proposed change will not result in a significant increase in the probability or consequences of any previously evaluated accident.

   The proposed changes to condenser evacuation system effluent monitoring applicabiltiy described in Item 5 above remove the requirement to monitor this release path when it is isolated from its source of potential radioactive gaseous effluent. The proposed change maintains the requirement to monitor this path when it is a potential gaseous radioactive effluent pathway. The proposed change affects only condenser

evacuation system effluent monitoring instrumentation, which does not contribute to the occurrence of nor is credited in the mitigation of any previously evaluated accident. Because of these facts, the proposed change does not affect the probability or consequences of any previously evaluated accident.

Item 6 relates to the containment purge system effluent monitoring. Currently this effluent monitoring function is served by containment airborne monitor RT-7804-1. This monitor also serves the ESFAS CPIS function and the RCS leakage detection function. The technical specifications governing these other functions are unaffected by the proposed change. The CPIS function is credited in the evaluation of the limiting in containment fuel handling accident in MODE 6. Because the proposed change does not affect the CPIS requirements, the probability and consequences of this previously evaluated accident remain unchanged.

2. Will operation of the facility in accordance with this proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No

Items 1, 7, 8, 9, 10 and 11 are editorial in nature. Because they make no changes to the configuration of the plant or its operation, they do not create the possibility of a new or different kind of accident from any previously evaluated.

The proposed changes described in Items 2 and 4 above require fewer instruments to perform plant vent stack monitoring functions than are presently required. However the requirements to monitor plant vent stack effluents and to automatcially terminate releases from the waste gas holdup system remain unchanged. Because the functional requirements remain unchanged the proposed change does not alter the configuration of the plant or its operation in a manner that creates the possibility of a new or different kind of accident from any previously evaluated.

The proposed change described in Item 3 revises ACTION 39 to allow continued plant operation with more than one waste gas holdup system explosive gas monitoring channel inoperable. The revised ACTION 39 includes compensatory measures to preclude the buildup of explosive gas concentrations. With this compensatory measure, the requirement to monitor the waste gas holdup system remains unchanged. Therefore, the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

As described above, Item 6 will allow the use of plant vent stack monitor (RT-7865-1) in lieu of the instrument currently used to monitor containment purge effluent (containment airborne radiation monitor RT-7804-1) when it is inoperable. This provision would be applicable until the dedicated purge effluent monitor is installed. The plant vent

stack monitor does not currently have provisions for automatic termination of containment purge. However, the restrictions included with the use of the plant vent stack monitor and the other diverse means of isolating containment purge (e.g., other CPIS inputs, CIAS and SIAS) assure the purge effluent monitoring will be essentially equivalent to the current provisions. Because purge effluent monitoring is maintained essentially equivalent to the current provisions, the proposed change does not create the possibility for a new or different kind of accident from any previously evaluated.

Item 5 reduces the applicability of the condenser evacuation system monitor from "all MODES" to "MODES 1-4 with any MSIV or MSIV bypass valve is not fully closed". As stated above, the condenser evacuation system is not a potential release path when the plant is in this configuration. This change does not alter the configuration of the plant nor does it create any new mechanisms for initiation of an accident of a new or different kind from any previously evaluated.

3. Will operation of the facility in accordance with the proposed change involve a significant reduction in a margin of safety?

   Response: No

   The proposed change clarifies the technical specification requirements for radioactive gaseous effluent monitoring instrumentation. Items 1, 7, 8, 9, 10 and 11 described above are editorial in nature and therefore do not involve a reduction in any safety margin. Although Items 2, 3, 4, 5 and 6 involve some reduction in existing requirements, the provisions and associated compensatory measures contained in the proposed change maintain effluent monitoring functional requirements at a level essentially equivalent to the current provisions. Therefore, no margin of safety is significantly reduced by the proposed change.

48 FR 14864 dated April 6, 1983, provided examples of amendments considered not likely to involve a significant hazards consideration. Items 1, 7, 8, 9, 10 and 11 of the proposed change are similar to Example (i) in that they are editorial in nature. Items 2, 3, 4, 5 and 6 are considered to be most similar to Example (vi) in that they involve some degree of reduction of existing Technical Specification requirements, which may be perceived to involve an insignificant reduction in a margin of safety, but are within the acceptance criteria of the Standard Review Plan.

Safety and Significant Hazards Determination

Based on the above Safety Analysis, it is concluded that: (1) the proposed change does not constitute a significant hazards consideration as defined by 10 CFR 50.92; and (2) there is reasonable assurance that the health and safety of the public will not be endangered by the proposed change; and (3) this action will not result in a condition which significantly alters the impact of the station on the environment as described in the NRC Final Environmental Statement.

PSmith:0244F

ATTACHMENT "A"

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.9 The radioactive gaseous effluent monitoring instrumentation channels shown in Table 3.3-13 shall be OPERABLE with their alarm/trip setpoints set to ensure that the limits of Specification 3.11.2.1 are not exceeded. The alarm/trip setpoints of these channels shall be determined in accordance with the ODCM.

APPLICABILITY: As shown in Table 3.3-13*

ACTION:

a. With a radioactive gaseous effluent monitoring instrumentation channel alarm/trip setpoint less conservative than required by the above Specification, immediately suspend the release of radioactive gaseous effluents monitored by the affected channel or declare the channel inoperable.

b. With less than the minimum number of radioactive gaseous effluent monitoring instrumentation channels OPERABLE, take the ACTION shown in Table 3.3-13. Additionally, if the inoperable instruments are not returned to OPERABLE status within 30 days, explain the next Semi-annual Radioactive Effluent Release Report why the inoperability was not corrected in a timely manner.

c. The provisions of Specifications 3.0.3, 3.0.4, and 6.9.1.13b are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.9 Each radioactive gaseous effluent monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK, SOURCE CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST operations at the frequencies shown in Table 4.3-9.

*See Special Test Exception 3.10.5

TABLE 3-13

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

	INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABILITY	ACTION
1.	WASTE GAS HOLDUP SYSTEM			
	a. Noble Gas Activity Monitor - Providing Alarm and Automatic Termination of Release - 2/3 RT - 7814 or 2/3 RT - 7808	1	*	35
	b. Effluent System Flow Rate Measuring Device	1	*	36
2.	WASTE GAS HOLDUP SYSTEM EXPLOSIVE GAS MONITORING SYSTEM			
	a. Hydrogen Monitor	2	**	39
	b. Oxygen Monitor	2	**	39
3.	CONDENSER EVACUATION SYSTEM			
	a. Noble Gas Activity Monitor - 2RT - 7818 or 2RT - 7870-1	1	*	37, (a)
	b. Iodine Sampler	1	*	40
	c. Particulate Sampler	1	*	40
	d. Flow Rate Monitor	1	*	36
4.	PLANT VENT STACK			
	a. Noble Gas Activity Monitor - - 2/3 RT - 7808, or 2RT-7865-1 and 3RT-7865-1	1	*	37, (a)
	b. Iodine Sampler	1	*	40
	c. Particulate Sampler	1	*	40
	d. Flow Rate Monitor	1	*	36
	e. Sampler Flow Rate Measuring Device	1	*	36
5.	CONTAINMENT PURGE SYSTEM			
	a. Noble Gas Activity Monitor - Providing Alarm and Automatic Termination of Release - 2RT - 7804-1	1	*	38, (b),(c)
	b. Iodine Sampler	1	*	40, (c)
	c. Particulate Sampler	1	*	40, (b), (c)
	d. Flow Rate Monitor	1	*	36
	e. Sampler Flow Rate Measuring Device	1	*	36

TABLE 3.3-13 (Continued)

TABLE NOTATION

* At all times.

** During waste gas holdup system operation (treatment for primary system offgases).

a) In accordance with Table 3.3-6 ACTION 19

b) In accordance with the ACTION Requirements of Specification 3.4.5.1 (Modes 1, 2, 3 and 4)

c) In accordance with the ACTION Requirement of Specification 3.9.9 (Mode 6)

ACTION 35 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, the contents of the tank(s) may be released to the environment for up to 14 days provided that prior to initiating the release:

a. At least two independent samples of the tank's contents are analyzed, and

b. At least two technically qualified members of the Facility Staff independently verify the release rate calculations and discharge valve lineup;

Otherwise, suspend release of radioactive effluents via this pathway.

ACTION 36 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue for up to 30 days provided the flow rate is estimated at least once per 4 hours.

ACTION 37 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue for up to 30 days provided grab samples are taken at least once per 8 hours and these samples are analyzed for gross activity within 24 hours.

ACTION 38 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, immediately suspend PURGING of radioactive effluents via this pathway.

ACTION 39 - With the number of channnels OPERABLE one less than required by the Minimum Channels OPERABLE requirement, operation of this system may continue for up to 14 days. With two channels inoperable, be in at least HOT STANDBY within 6 hours.

ACTION 40 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via the affected pathway may continue for up to 30 days provided samples are continuously collected with auxiliary sampling equipment as required in Table 4.11-2.

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TABLE 3.3-13 (Continued)

TABLE NOTATION

Note 1

From August 6, 1982, through September 6, 1982, containment purge with Noble Gas Activity Monitor 2RT-7804-1 inoperable is permissable for no more than two hours per day provided that:

(1) Vent stack monitor 2RT-7865-1 is OPERABLE and aligned to the purge stack for the duration of the purge.

(2) In the event of a high activity alarm on 2RT-7865-1 during the purge, an operator will (a) suspend containment purge and then (b) realign 2RT-7865-1 to the vent stack.

(3) When purging is completed, 2RT-7865-1 is returned to its normal alignment.

TABLE 4.3-9

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	SOURCE CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
1. WASTE GAS HOLDUP SYSTEM					
a. Noble Gas Activity Monitor -- Providing Alarm and Automatic Termination of Release - 2/3 RT - 7814 or 2/3 RT-7808	P	P	R(3)	Q(1)	*
b. Flow Rate Monitor	P	N.A.	R	Q	*
2. WASTE GAS HOLDUP SYSTEM EXPLOSIVE GAS MONITORING SYSTEM					
a. Hydrogen Monitor (continuous)	D	N.A.	Q(4)	M	**
b. Hydrogen Monitor (periodic)	D	N.A.	Q(4)	M	**
c. Oxygen Monitor (continuous)	D	N.A.	Q(5)	M	**
d. Oxygen Monitor (periodic)	D	N.A.	Q(5)	M	**
3. CONDENSER EVACUATION SYSTEM					
a. Noble Gas Activity Monitor - 2RT - 7818, 2RT - 7870-1	D	M	R(3)	Q(2)	*
b. Iodine Sampler	W	N.A.	N.A.	N.A.	*
c. Particulate Sampler	W	N.A.	N.A.	N.A.	*
d. Flow Rate Monitor	D	N.A.	R	Q	*
4. PLANT VENT STACK					
a. Noble Gas Activity Monitor - 2/3 RT - 7808, or 2RT - 7865-1 and 3RT-7865-1	D	M	R(3)	Q(2)	*
b. Iodine Sampler	W	N.A.	N.A.	N.A.	*
c. Particulate Sampler	W	N.A.	N.A.	N.A.	*
d. Flow Rate Monitor	D	N.A.	R	Q	*
e. Sampler Flow Rate Measuring Device	D	N.A.	R	Q	*

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	SOURCE CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
5. CONTAINMENT PURGE SYSTEM(7)					
a. Noble Gas Activity Monitor - Providing Alarm and Automatic Termination of Release - 2 RT - 7804-1	S	P(6)	R(3)	M(1)	*
b. Iodine Sampler	W	N.A.	N.A.	N.A.	*
c. Particulate Sampler	W	N.A.	N.A.	N.A.	*
d. Flow Rate Monitor	D	N.A.	R	Q	*
e. Sampler Flow Rate Measuring Device	D	N.A.	R	Q	*

TABLE NOTATION

* At all times.

** During waste gas holdup system operation (treatment for primary system offgases).

(1) The CHANNEL FUNCTIONAL TEST shall also demonstrate that automatic isolation of this pathway and control room alarm annunciation occurs if any of the following conditions exists:#

1. Instrument indicates measured levels above the alarm/trip setpoint.
2. Circuit failure.
3. Instrument indicates a downscale failure.

(2) The CHANNEL FUNCTIONAL TEST shall also demonstrate that control room alarm annunciation occurs if any of the following conditions exists#:

1. Instrument indicates measured levels above the alarm setpoint.
2. Circuit failure.
3. Instrument indicates a downscale failure.

(3) The initial CHANNEL CALIBRATION shall be performed using one or more of the reference standards certified by the National Bureau of Standards or using standards that have been obtained from suppliers that participate in measurement assurance activities with NBS. These standards shall permit calibrating the system over its intended range of energy and measurement range. For subsequent CHANNEL CALIBRATION, sources that have been related to the initial calibration shall be used.

(4) The CHANNEL CALIBRATION shall include the use of standard gas samples containing a nominal:

1. One volume percent hydrogen, balance nitrogen, and
2. Four volume percent hydrogen, balance nitrogen.

(5) The CHANNEL CALIBRATION shall include the use of standard gas samples containing a nominal:

1. One volume percent oxygen, balance nitrogen, and
2. Four volume percent oxygen, balance nitrogen.

(6) Prior to each release and at least once per month.

(7) Surveillance of containment airborne monitor 2RT-7807-2 and its associated sampling media, when required OPERABLE by other Specifications, shall be in accordance with the Surveillance Requirement for Containment Purge Effluent monitoring.

#If the instrument controls are not set in the operate mode, procedures shall call for declaring the channel inoperable.

ATTACHMENT "B"

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.9 The radioactive gaseous effluent monitoring instrumentation channels shown in Table 3.3-13 shall be OPERABLE with their alarm/trip setpoints set to ensure that the limits of Specification 3.11.2.1 are not exceeded. The alarm/trip setpoints of these channels shall be determined in accordance with the ODCM.

APPLICABILITY: As shown in Table 3.3-13*

ACTION:

a. With a radioactive gaseous effluent monitoring instrumentation channel alarm/trip setpoint less conservative than required by the above Specification, immediately suspend the release of radioactive gaseous effluents monitored by the affected channel or declare the channel inoperable.

b. With less than the minimum number of radioactive gaseous effluent monitoring instrumentation channels OPERABLE, take the ACTION shown in Table 3.3-13. Additionally, if the inoperable instrument(s) remain inoperable for greater than 30 days, explain the next Semi-annual Radioactive Effluent Release Report why the inoperability was not corrected in a timely manner.

c. The provisions of Specifications 3.0.3, 3.0.4, and 6.9.1.13b are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.9 Each radioactive gaseous effluent monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK, SOURCE CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST operations at the frequencies shown in Table 4.3-9.

*See Special Test Exception 3.10.5

TABLE 3.3-13

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

	INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABILITY	ACTION
1.	WASTE GAS HOLDUP SYSTEM			
	a. Noble Gas Activity Monitor - Providing Alarm and Automatic Termination of Release - 2/3 RT-7808, 2RT-7865-1 or 3RT-7865-1	1	*	35
	b. Process Flow Rate Monitoring Device	1	*	36
2.	WASTE GAS HOLDUP SYSTEM EXPLOSIVE GAS MONITORING SYSTEM			
	a. Hydrogen Monitor	2	**	39
	b. Oxygen Monitor	2	**	39
3.	CONDENSER EVACUATION SYSTEM			
	a. Noble Gas Activity Monitor - 2RT - 7818 or 2RT - 7870-1	1	***	37
	b. Iodine Sampler	1	***	40
	c. Particulate Sampler	1	***	40
	d. Associated Sample Flow Measuring Device	1	***	36
	e. Process Flow Rate Monitoring Device	1 (4)	***	36
4.	PLANT VENT STACK			
	a. Noble Gas Activity Monitor - - 2/3 RT - 7808, or 2RT-7865-1 or 3RT-7865-1	1	*	37
	b. Iodine Sampler	1	*	40
	c. Particulate Sampler	1	*	40
	d. Associated Sample Flow Measuring Device	1	*	36
	e. Process Flow Rate Monitoring Device	1 (5)	*	36
5.	CONTAINMENT PURGE SYSTEM			
	a. Noble Gas Activity Monitor - Providing Alarm and Automatic Termination of Release - 2RT - 7828 or 2 RT-7865-1(1)	1 (2)	*	38
	b. Iodine Sampler	1 (2)	*	40
	c. Particulate Sampler	1 (2)	*	40
	d. Process Flow Rate Monitoring Device	1 (3)	*	36
	e. Associated Sample Flow Measuring Device	1 (2)	*	36

TABLE 3.3-13 (Continued)

TABLE NOTATION

* At all times.

** During waste gas holdup system operation (treatment for primary system offgases).

*** MODES 1-4 with any main steam isolation valve and/or any main steam isolating valve bypass valve not

(1) Provided 2RT-7865-1 is equipped to automatically terminate containment purge release./fully closed.

(2) Prior to completion of DCP53N, Containment Airborne Radiation Monitor 2RT-7804-1 performs the functions of 2RT-7828.
2RT-7804-1 is not equipped to monitor purge flow.

(3) Prior to completion of DCP53N, 2RT-7865-1 may perform this function for minipurge only. Otherwise comply with ACTION 36 if another means of continuously monitoring purge flow is not available.

(4) See attached page.

(5) See attached page.

ACTION 35 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, the contents of the tank(s) may be released to the environment provided that prior to initiating the release:

a. At least two independent samples of the tank's contents are analyzed, and

b. At least two technically qualified members of the Facility Staff independently verify the release rate calculations and discharge valve lineup;

ACTION 36 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided the flow rate is estimated at least once per 8 hours. System design characteristics may be used to estimate flow.

ACTION 37 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided grab samples are taken at least once per 8 hours and these samples are analyzed for gross activity within 24 hours.

ACTION 38 - See attached page

ACTION 39 - With the number of channnels OPERABLE one less than required by the Minimum Channels OPERABLE requirement, operation of this system may continue provided that the remaining OPERABLE channel is aligned to the waste gas surge tank. With two channels inoperable operation of this system may continue provided that grab samples are taken at least once per 4 hours and analyzed within the following 4 hours.

ACTION 40 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via the affected pathway may continue provided samples are continuously collected with auxiliary sampling equipment as required in Table 4.11-2.

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TABLE 4.3-9

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	SOURCE CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
1. WASTE GAS HOLDUP SYSTEM					
a. Noble Gas Activity Monitor - Providing Alarm and Automatic Termination of Release - 2RT-7865-1 or 2/3 RT-7808 or 3RT-7865-1	P	P	R(3)	Q(1)	*
b. Process Flow Monitoring Device	P	N.A.	R	Q	*
2. WASTE GAS HOLDUP SYSTEM EXPLOSIVE GAS MONITORING SYSTEM					
a. Hydrogen Monitor(continuous)	D	N.A.	Q(4)	M	**
b. Oxygen Monitor(continuous)	D	N.A.	Q(4)	M	**
c. Hydrogen Monitor(periodic)	D	N.A.	Q(5)	M	**
d. Oxygen Monitor(periodic)	D	N.A.	Q(5)	M	**
3. CONDENSER EVACUATION SYSTEM					
a. Noble Gas Activity Monitor - 2RT - 7818, 2RT - 7870-1	D	M	R(3)	Q(2)	***
b. Iodine Sampler	N.A.	N.A.	N.A.	N.A.	N.A.
c. Particulate Sampler	N.A.	N.A.	N.A.	N.A.	N.A.
d. Associated Sample Flow Measuring Device	D	N.A.	R	Q	***
e. Process Flow Rate Monitoring Device (2RT-7870-1)	D	N.A.	R	Q	***
4. PLANT VENT STACK					
a. Noble Gas Activity Monitor - 2/3 RT - 7808, 2RT - 7865-1 or 3RT-7865-1	D	M	R(3)	Q(2)	*
b. Iodine Sampler	N.A.	N.A.	N.A.	N.A.	N.A.
c. Particulate Sampler	N.A.	N.A.	N.A.	N.A.	N.A.
d. Associated Sample Flow Measuring Device	D	N.A.	R	Q	*
e. Process Flow Rate Monitoring Device	D	N.A.	R	Q	*

TABLE 4.3-9 (Continued)

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	SOURCE CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
5. CONTAINMENT PURGE SYSTEM(7)					
a. Noble Gas Activity Monitor - Providing Alarm and Automatic Termination of Release - 2RT-7828 or 2RT-7865-1	D	P(6)	R(3)	Q(1)	*
b. Iodine Sampler	N.A.	N.A.	N.A.	N.A.	N.A.
c. Particulate Sampler	N.A.	N.A.	N.A.	N.A.	N.A.
d. Process Flow Rate Monitoring Device	D	N.A.	R	Q	*
e. Associated Sample Flow Measuring Device	D	N.A.	R	Q	*

TABLE NOTATION

* At all times.

** During waste gas holdup system operation (treatment for primary system offgases).

*** MODES 1-4 with any main steam isolation valve and/or any main steam isolating valve bypass valve not fully closed.

(1) The CHANNEL FUNCTIONAL TEST shall also demonstrate that automatic isolation of this pathway and control room alarm annunciation occurs if any of the following conditions exists:#

1. Instrument indicates measured levels above the alarm/trip setpoint.
2. Circuit failure.
3. Instrument indicates a downscale failure.

(2) The CHANNEL FUNCTIONAL TEST shall also demonstrate that control room alarm annunciation occurs if any of the following conditions exists#:

1. Instrument indicates measured levels above the alarm setpoint.
2. Circuit failure.
3. Instrument indicates a downscale failure.

(3) The initial CHANNEL CALIBRATION shall be performed using one or more of the reference standards certified by the National Bureau of Standards or using standards that have been obtained from suppliers that participate in measurement assurance activities with NBS. These standards shall permit calibrating the system over its intended range of energy and measurement range. For subsequent CHANNEL CALIBRATION, sources that have been related to the initial calibration shall be used.

(4) The CHANNEL CALIBRATION shall include the use of standard gas samples containing a nominal:

1. One volume percent hydrogen, balance nitrogen, and
2. Four volume percent hydrogen, balance nitrogen.

(5) The CHANNEL CALIBRATION shall include the use of standard gas samples containing a nominal:

1. One volume percent oxygen, balance nitrogen, and
2. Four volume percent oxygen, balance nitrogen.

(6) Prior to each release and at least once per month.

(7) Prior to completion of DCP53N, these surveillance requirements are to be performed on the instrumentation indicated by Table 3.3-13.

#If the instrument controls are not set in the operate mode, procedures shall call for declaring the channel inoperable.

ATTACHMENT "C"

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.9 The radioactive gaseous effluent monitoring instrumentation channels shown in Table 3.3-13 shall be OPERABLE with their alarm/trip setpoints set to ensure that the limits of Specification 3.11.2.1 are not exceeded. The alarm/trip setpoints of these channels shall be determined in accordance with the ODCM.*

APPLICABILITY: As shown in Table 3.3-13

ACTION:

a. With a radioactive gaseous effluent monitoring instrumentation channel alarm/trip setpoint less conservative than required by the above Specification, immediately suspend the release of radioactive gaseous effluents monitored by the affected channel or declare the channel inoperable.

b. With less than the minimum number of radioactive gaseous effluent monitoring instrumentation channels OPERABLE, take the ACTION shown in Table 3.3-13. Additionally, if the inoperable instruments are not returned to OPERABLE status within 30 days, explain the next Semi-annual Radioactive Effluent Release Report why the inoperability was not corrected in a timely manner.

c. The provisions of Specifications 3.0.3, 3.0.4, and 6.9.1.13b are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.9 Each radioactive gaseous effluent monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK, SOURCE CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST operations at the frequencies shown in Table 4.3-9.

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*Continuous monitoring and sampling of the containment purge exhaust directly from the purge stack shall be provided for the low and high volume (8-inch and 42-inch) containment purge prior to startup following the first refueling outage. Containment airborne monitor 3RT-7804-1 or 3RT-7807-2 and associated sampling media shall perform these functions prior to initial criticality. From initial criticality to the startup following the first refueling outage containment airborne monitor 3RT-7804-1 and associated sampling media shall perform the above required functions.

TABLE 3.3-13

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

	INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABILITY	ACTION
1.	WASTE GAS HOLDUP SYSTEM			
	a. Noble Gas Activity Monitor - Providing Alarm and Automatic Termination of Release - 2/3 RT - 7814 or 2/3 RT - 7808	1	*	35
	b. Effluent System Flow Rate Measuring Device	1	*	36
2.	WASTE GAS HOLDUP SYSTEM EXPLOSIVE GAS MONITORING SYSTEM			
	a. Hydrogen Monitor	2	**	39
	b. Oxygen Monitor	2	**	39
3.	CONDENSER EVACUATION SYSTEM			
	a. Noble Gas Activity Monitor - 3RT - 7818 or 3RT - 7870-1	1	*	37, (a)
	b. Iodine Sampler	1	*	40
	c. Particulate Sampler	1	*	40
	d. Flow Rate Monitor	1	*	36
4.	PLANT VENT STACK			
	a. Noble Gas Activity Monitor - - 2/3 RT - 7808, or 2RT-7865-1 and 3RT-7865-1	1	*	37, (a)
	b. Iodine Sampler	1	*	40
	c. Particulate Sampler	1	*	40
	d. Flow Rate Monitor	1	*	36
	e. Sampler Flow Rate Measuring Device	1	*	36
5.	CONTAINMENT PURGE SYSTEM			
	a. Noble Gas Activity Monitor - Providing Alarm and Automatic Termination of Release - 3RT - 7804-1	1	*	38, (b),(c)
	b. Iodine Sampler	1	*	40, (c)
	c. Particulate Sampler	1	*	40, (b), (c)
	d. Flow Rate Monitor	1	*	36
	e. Sampler Flow Rate Measuring Device	1	*	36

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TABLE 3.3-13 (Continued)

TABLE NOTATION

* At all times.

** During waste gas holdup system operation (treatment for primary system offgases).

a) In accordance with Table 3.3-6 ACTION 19

b) In accordance with the ACTION Requirements of Specification 3.4.5.1 (Modes 1, 2, 3 and 4)

c) In accordance with the ACTION Requirement of Specification 3.9.9 (Mode 6)

ACTION 35 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, the contents of the tank(s) may be released to the environment for up to 14 days provided that prior to initiating the release:

a. At least two independent samples of the tank's contents are analyzed, and

b. At least two technically qualified members of the Facility Staff independently verify the release rate calculations and discharge valve lineup;

Otherwise, suspend release of radioactive effluents via this pathway.

ACTION 36 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue for up to 30 days provided the flow rate is estimated at least once per 4 hours.

ACTION 37 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue for up to 30 days provided grab samples are taken at least once per 8 hours and these samples are analyzed for gross activity within 24 hours.

ACTION 38 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, immediately suspend PURGING of radioactive effluents via this pathway.

ACTION 39 - With the number of channnels OPERABLE one less than required by the Minimum Channels OPERABLE requirement, operation of this system may continue for up to 14 days. With two channels inoperable, be in at least HOT STANDBY within 6 hours.

ACTION 40 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via the affected pathway may continue for up to 30 days provided samples are continuously collected with auxiliary sampling equipment as required in Table 4.11-2.

TABLE 4.3-9

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	SOURCE CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
1. WASTE GAS HOLDUP SYSTEM					
a. Noble Gas Activity Monitor - Providing Alarm and Automatic Termination of Release - 2/3 RT - 7814 or 2/3 RT-7808	P	P	R(3)	Q(1)	*
b. Flow Rate Monitor	P	N.A.	R	Q	*
2. WASTE GAS HOLDUP SYSTEM EXPLOSIVE GAS MONITORING SYSTEM					
a. Hydrogen Monitor (continuous)	D	N.A.	Q(4)	M	**
b. Hydrogen Monitor (periodic)	D	N.A.	Q(4)	M	**
c. Oxygen Monitor (continuous)	D	N.A.	Q(5)	M	**
d. Oxygen Monitor (periodic)	D	N.A.	Q(5)	M	**
3. CONDENSER EVACUATION SYSTEM					
a. Noble Gas Activity Monitor - 3RT - 7818, 3RT - 7870-1	D	M	R(3)	Q(2)	*
b. Iodine Sampler	W	N.A.	N.A.	N.A.	*
c. Particulate Sampler	W	N.A.	N.A.	N.A.	*
d. Flow Rate Monitor	D	N.A.	R	Q	*
4. PLANT VENT STACK					
a. Noble Gas Activity Monitor - 2/3 RT - 7808, or 2RT - 7865-1 and 3RT-7865-1	D	M	R(3)	Q(2)	*
b. Iodine Sampler	W	N.A.	N.A.	N.A.	*
c. Particulate Sampler	W	N.A.	N.A.	N.A.	*
d. Flow Rate Monitor	D	N.A.	R	Q	*
e. Sampler Flow Rate Measuring Device	D	N.A.	R	Q	*

TABLE 4.3-9 (Continued)

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	SOURCE CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
5. CONTAINMENT PURGE SYSTEM(7)					
a. Noble Gas Activity Monitor - Providing Alarm and Automatic Termination of Release - 3RT - 7804-1	S	P(6)	R(3)	M(1)	*
b. Iodine Sampler	W	N.A.	N.A.	N.A.	*
c. Particulate Sampler	W	N.A.	N.A.	N.A.	*
d. Flow Rate Monitor	D	N.A.	R	Q	*
e. Sampler Flow Rate Measuring Device	D	N.A.	R	Q	*

TABLE 4.3-9 (Continued)

TABLE NOTATION

* At all times.

** During waste gas holdup system operation (treatment for primary system offgases).

(1) The CHANNEL FUNCTIONAL TEST shall also demonstrate that automatic isolation of this pathway and control room alarm annunciation occurs if any of the following conditions exists:#

1. Instrument indicates measured levels above the alarm/trip setpoint.
2. Circuit failure.
3. Instrument indicates a downscale failure.

(2) The CHANNEL FUNCTIONAL TEST shall also demonstrate that control room alarm annunciation occurs if any of the following conditions exists#:

1. Instrument indicates measured levels above the alarm setpoint.
2. Circuit failure.
3. Instrument indicates a downscale failure.

(3) The initial CHANNEL CALIBRATION shall be performed using one or more of the reference standards certified by the National Bureau of Standards or using standards that have been obtained from suppliers that participate in measurement assurance activities with NBS. These standards shall permit calibrating the system over its intended range of energy and measurement range. For subsequent CHANNEL CALIBRATION, sources that have been related to the initial calibration shall be used.

(4) The CHANNEL CALIBRATION shall include the use of standard gas samples containing a nominal:

1. One volume percent hydrogen, balance nitrogen, and
2. Four volume percent hydrogen, balance nitrogen.

(5) The CHANNEL CALIBRATION shall include the use of standard gas samples containing a nominal:

1. One volume percent oxygen, balance nitrogen, and
2. Four volume percent oxygen, balance nitrogen.

(6) Prior to each release and at least once per month.

(7) Surveillance of containment airborne monitor 3RT-7807-2 and its associated sampling media, when required OPERABLE by other Specifications, shall be in accordance with the Surveillance Requirement for Containment Purge Effluent monitoring.

#If the instrument controls are not set in the operate mode, procedures shall call for declaring the channel inoperable.

ATTACHMENT "D"

INSTRUMENTATION

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.9 The radioactive gaseous effluent monitoring instrumentation channels shown in Table 3.3-13 shall be OPERABLE with their alarm/trip setpoints set to ensure that the limits of Specification 3.11.2.1 are not exceeded. The alarm/trip setpoints of these channels shall be determined in accordance with the ODCM.*

APPLICABILITY: As shown in Table 3.3-13

ACTION:

a. With a radioactive gaseous effluent monitoring instrumentation channel alarm/trip setpoint less conservative than required by the above Specification, immediately suspend the release of radioactive gaseous effluents monitored by the affected channel or declare the channel inoperable.

b. With less than the minimum number of radioactive gaseous effluent monitoring instrumentation channels OPERABLE, take the ACTION shown in Table 3.3-13. Additionally, if the inoperable instrument(s) remain inoperable for greater than 30 days, explain the next Semi-annual Radioactive Effluent Release Report why the inoperability was not corrected in a timely manner.

c. The provisions of Specifications 3.0.3, 3.0.4, and 6.9.1.13b are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.9 Each radioactive gaseous effluent monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK, SOURCE CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST operations at the frequencies shown in Table 4.3-9.

*Continuous monitoring and sampling of the containment purge exhaust directly from the purge stack shall be provided for the low and high volume (8-inch and 42-inch) containment purge prior to startup following the first refueling outage. Containment airborne monitor 3RT-7804-1 or 3RT-7807-2 and associated sampling media shall perform these functions prior to initial criticality. From initial criticality to the startup following the first refueling outage containment airborne monitor 3RT-7804-1 and associated sampling media shall perform the above required functions.

TABLE 3.3-13

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABILITY	ACTION
1. WASTE GAS HOLDUP SYSTEM			
a. Noble Gas Activity Monitor - Providing Alarm and Automatic Termination of Release - 2/3 RT-7808, 2 RT-7865-1 or 3 RT-7865-1	1	*	35
b. Process Flow Rate Monitoring Device	1	*	36
2. WASTE GAS HOLDUP SYSTEM EXPLOSIVE GAS MONITORING SYSTEM			
a. Hydrogen Monitor	2	**	39
b. Oxygen Monitor	2	**	39
3. CONDENSER EVACUATION SYSTEM			
a. Noble Gas Activity Monitor - 3RT - 7818 or 3RT - 7870-1	1	***	37
b. Iodine Sampler	1	***	40
c. Particulate Sampler	1	***	40
d. Associated Sample Flow Measuring Device	1	***	36
e. Process Flow Rate Monitoring Device	1 (4)	***	36
4. PLANT VENT STACK			
a. Noble Gas Activity Monitor - - 2/3 RT - 7808, 2RT-7865-1 or 3RT-7865-1	1	*	37
b. Iodine Sampler	1	*	40
c. Particulate Sampler	1	*	40
d. Associated Sample Flow Measuring Device	1	*	36
e. Process Flow Rate Monitoring Device	1 (5)	*	36
5. CONTAINMENT PURGE SYSTEM			
a. Noble Gas Activity Monitor - Providing Alarm and Automatic Termination of Release 3RT-7828 or 3RT-7865-1 (1)	1 (2)	*	38
b. Iodine Sampler	1 (2)	*	40
c. Particulate Sampler	1 (2)	*	40
d. Process Flow Rate Monitoring Device	1 (3)	*	36
e. Associated Sample Flow Measuring Device	1 (2)	*	36

TABLE 3.3-13 (Continued)

TABLE NOTATION

* At all times.

** During waste gas holdup system operation (treatment for primary system offgases).

*** MODES 1-4 with any main steam isolation valve and/or any main steam isolating valve bypass valve not fully closed.

(1) Provided 3RT-7865-1 is equipped to automatically terminate containment purge release.

(2) Prior to completion of DCP53N, Containment Airborne Radiation Monitor 3RT-7804-1 performs the functions of 3RT-7828.
3 RT-7804-1 is not equipped to monitor purge flow.

(3) Prior to completion of DCP53N, 3RT-7865-1 may perform this function for minipurge only. Otherwise comply with ACTION 36 if another means of continuously monitoring purge flow is not available.

(4) See attached page.

(5) See attached page.

ACTION 35 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, the contents of the tank(s) may be released to the environment provided that prior to initiating the release:

a. At least two independent samples of the tank's contents are analyzed, and

b. At least two technically qualified members of the Facility Staff independently verify the release rate calculations and discharge valve lineup;

ACTION 36 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided the flow rate is estimated at least once per 8 hours. System design characteristics may be used to estimate flow.

ACTION 37 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue , provided grab samples are taken at least once per 12 hours and these samples are analyzed for gross activity within 24 hours.

ACTION 38 - See attached page

ACTION 39 - With the number of channnels OPERABLE one less than required by the Minimum Channels OPERABLE requirement, operation of this system may continue provided that the remaining OPERABLE channel is aligned to the waste gas surge tank. With two channels inoperable, operation of this system may continue provided that grab samples are taken at least once per 4 hours and analyzed within the following four hours.

ACTION 40 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via the affected pathway may continue provided samples are continuously collected with auxiliary sampling equipment as required in Table 4.11-2.

ACTION 38 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, immediately suspend PURGING of radioactive effluents via this pathway

OR

Prior to completion of DCP53N, and with Plant Vent Stack Monitor 3RT-7865-1 not capable of terminating containment purge release, PURGING may continue using 3RT-7865-1 provided that:

1) Plant Vent Stack Monitor 3RT-7865-1 is aligned to the purge stack for the duration of the purge; and,

2) Plant Vent Stack Monitor 2/3 RT-7808 or 2RT-7865-1 is OPERABLE and aligned to the plant vent stack; and,

3) When PURGING is complete, 3RT-7865-1 is realigned to the plant vent stack; and,

4) In the event of a high activity alarm during the PURGE from any of 3RT-7865-1, 2RT-7865-1 or 2/3 RT-7808, an operator immediately suspends containment PURGING and re-aligns 3RT-7865-1 to the Plant Vent Stack.

Notes Cont'd

(4) 3 RT-7818 is not equipped to monitor process flow. If another means of continuously monitoring process flow is not available, then comply with ACTION 36.

(5) 2/3 RT-7808 is not equipped to monitor plant vent stack flow. If another means of continously monitoring plant vent stack flow is not available then comply with ACTION 36.

TABLE 4.3-9

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	SOURCE CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
1. WASTE GAS HOLDUP SYSTEM					
a. Noble Gas Activity Monitor - Providing Alarm and Automatic Termination of Release - 2/3 RT-7808 2RT-7865-1 or 3RT-7865-1	P	P	R(3)	Q(1)	*
b. Process Flow Rate Monitoring Device	P	N.A.	R	Q	*
2. WASTE GAS HOLDUP SYSTEM EXPLOSIVE GAS MONITORING SYSTEM					
a. Hydrogen Monitor(continuous)	D	N.A.	Q(4)	M	**
b. Oxygen Monitor(continuous)	D	N.A.	Q(4)	M	**
c. Hydrogen Monitor(periodic)	D	N.A.	Q(5)	M	**
d. Oxygen Monitor(periodic)	D	N.A.	Q(5)	M	**
3. CONDENSER EVACUATION SYSTEM					
a. Noble Gas Activity Monitor - 3RT - 7818, 3RT - 7870-1	D	M	R(3)	Q(2)	***
b. Iodine Sampler	N.A.	N.A.	N.A.	N.A.	N.A.
c. Particulate Sampler	N.A.	N.A.	N.A.	N.A.	N.A.
d. Associated Sample Flow Measuring Device	D	N.A.	R	Q	**
e. Process Flow Rate Monitoring Device (3RT-7870-1)	D	N.A.	R	Q	***
4. PLANT VENT STACK					
a. Noble Gas Activity Monitor - 2/3 RT - 7808, 2RT - 7865-1, or 3RT-7865-1	D	M	R(3)	Q(2)	*
b. Iodine Sampler	N.A.	N.A.	N.A.	N.A.	N.A.
c. Particulate Sampler	N.A.	N.A.	N.A.	N.A.	N.A.
d. Associated Sample Flow Measuring Device	D	N.A.	R	Q	*
e. Process Flow Monitoring Device	D	N.A.	R	Q	*

TABLE 4.3-9 (Continued)

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	SOURCE CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
5. CONTAINMENT PURGE SYSTEM(7)					
a. Noble Gas Activity Monitor - Providing Alarm and Automatic Termination of Release - 3RT-7828 or 3RT-7865-1	D	P(6)	R(3)	Q (1)	*
b. Iodine Sampler	N.A.	N.A.	N.A.	N.A.	N.A.
c. Particulate Sampler	N.A.	N.A.	N.A.	N.A.	N.A.
d. Process Flow Rate Monitoring Device	D	N.A.	R	Q	*
e. Associated Sample Flow Measuring Device	D	N.A.	R	Q	*

TABLE 4.3-9 (Continued)

TABLE NOTATION

* At all times.

** During waste gas holdup system operation (treatment for primary system offgases).

*** MODES 1-4 with any main steam isolation valve and/or any main steam isolating valve bypass valve not fully closed.

(1) The CHANNEL FUNCTIONAL TEST shall also demonstrate that automatic isolation of this pathway and control room alarm annunciation occurs if any of the following conditions exists:#

1. Instrument indicates measured levels above the alarm/trip setpoint.
2. Circuit failure.
3. Instrument indicates a downscale failure.

(2) The CHANNEL FUNCTIONAL TEST shall also demonstrate that control room alarm annunciation occurs if any of the following conditions exists#:

1. Instrument indicates measured levels above the alarm setpoint.
2. Circuit failure.
3. Instrument indicates a downscale failure.

(3) The initial CHANNEL CALIBRATION shall be performed using one or more of the reference standards certified by the National Bureau of Standards or using standards that have been obtained from suppliers that participate in measurement assurance activities with NBS. These standards shall permit calibrating the system over its intended range of energy and measurement range. For subsequent CHANNEL CALIBRATION, sources that have been related to the initial calibration shall be used.

(4) The CHANNEL CALIBRATION shall include the use of standard gas samples containing a nominal:

1. One volume percent hydrogen, balance nitrogen, and
2. Four volume percent hydrogen, balance nitrogen.

(5) The CHANNEL CALIBRATION shall include the use of standard gas samples containing a nominal:

1. One volume percent oxygen, balance nitrogen, and
2. Four volume percent oxygen, balance nitrogen.

(6) Prior to each release and at least once per month.

(7) Prior to completion of DCP53N, these surveillance requirements are to be performed on the instruments indicated by Table 3.3-13.

#If the instrument controls are not set in the operate mode, procedures shall call for declaring the channel inoperable.

DESCRIPTION OF PROPOSED CHANGES NPF-10-103 AND NPF-15-103 AND SAFETY ANALYSIS

This is a request to revise Technical Specification Sections 3/4.11, Radioactive Effluents, and 3/4.12 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM.

Existing Specifications:

Unit 2: See Attachment "A"

Unit 3: See Attachment "B"

Proposed Specifications:

Units 2 and 3: See Attachment "C"

Description

The proposed change clarifies the requirements of Technical Specification Sections 3/4.11 and 3/4.12 and incorporates revised wording from NUREG 0472, Draft Revision 3, "Standard Radiological Effluent Technical Specifications (RETS) for Pressurized Water Reactors - September 1982". The proposed change does not result in an increase in any effluent release limit and it is essentially editorial in nature in that it, for the most part, incorporates wording which was provided by the staff, reflecting current staff positions. The changes are as follows:

1. RETS definitions of the terms MEMBER(S) OF THE PUBLIC, SITE BOUNDARY and UNRESTRICTED AREA are incorporated into Technical Specification Section 1.0, Definitions.

2. Surveillance requirements 4.11.1.1.1, 4.11.1.1.2 and 4.11.1.1.3 are revised in accordance with the RETS which simplifies 4.11.1.1.1 and 4.11.1.1.2 and deletes 4.11.1.1.3.

3. Table 4.11-1 Radioactive Liquid Waste Sampling Analysis Program is revised as follows:

   A. Note "a" is revised to incorporate RETS wording.

   B. The reference to the ODCM is removed from Note "d". The ODCM neither describes methods for thoroughly mixing batches of liquid radwaste nor is it required to do so.

   C. Note "f" is revised to reflect that the information required is to be reported in the Semiannual Radiological Effluent Release Report.

   D. Note "#" and "##" are deleted since their applicability has expired.

4. Specification 3.11.1.2 is revised to incorporate RETS wording and to recognize that Units 2&3 have a combined radwaste system. Specified dose limits are revised to reflect combined Units 2&3 values versus the current per reactor unit bases. The phrase "to assure that subsequent releases will be in compliance with Specification 3.11.1.2" are deleted from ACTION "a". This will make the ACTION wording more consistent with the wording of 10CFR 50 Appendix I for the action to be taken when the dose limits are exceeded. The reference to Specification 6.9.1.13b is removed from ACTION "b" because it is redundant to the reporting requirements of ACTION "a". Surveillance requirement 4.11.1.2 is revised to reflect that the required dose calculations are for the current calendar quarter and year.

5. Specification 3.11.1.3 is revised to recognize the combined Units 2&3 radwaste system and to reflect dose limits on a combined Units 2&3 bases rather than per reactor unit. The ACTIONs are revised to incorporate new RETS wording.

6. Specification 3.11.1.4 is revised to include the RETS clarification of which temporary tanks are covered by this Specification.

7. Specification 3.11.2. is revised to incorporate revised RETS wording and to clarify that unrestricted areas are those areas at and beyond the SITE BOUNDARY.

8. Table 4.11-2 Radioactive Gaseous Waste Sampling and Analysis Program is revised as follows:

   A. Note "a" is revised to incorporate RETS wording.

   B. Note "b" currently requires analysis for all gaseous release paths following shutdown, startup and thermal power changes of greater than 15% within one hour. Provided that primary coolant activity remains below the 1.0 micro Ci/gm DOSE EQUIVALENT I-131 limit of Specification 3/4.4.7 there will be no significant increase in gaseous effluent activity to merit the additional analyses currently required.

   C. Note "d" is similarly revised to base the requirement for additional analyses of iodine and particulate sampling media on primary coolant activity. Provided that primary coolant activity is below the 1.0 micro Ci/gm DOSE EQUIVALENT I-131 limit of Specification 3/4.4.7, the additional analysis required by Note "d" is not merited.

9. Specification 3.11.2.2 is revised to:

   A. clarify that "from the site" means to areas at and beyond the SITE BOUNDARY.

   B. specify dose limits on a combined Unit 2&3 bases versus per reactor unit.

C. Revise wording of ACTION "a" to be more consistent with the wording of 10CFR50 Appendix I for actions to be taken when dose limits are exceeded.

D. Clarify calculations of cumulative dose contributions due to noble gases are required by Surveillance Requirements 4.11.2.2.

10. Specification 3.11.2.3 is revised to:

A. Incorporate RETS wording

B. Clarify that "from the site" means to areas at and beyond the SITE BOUNDARY

C. Specify dose limits on a combined Units 2&3 bases

D. Revise wording of ACTION "a" to be more consistent with the wording of 10CFR50 Appendix I

E. Clarify the surveillance requirements in accordance with the revised RETS wording.

11. Specification 3/4.11.2.4 is revised to incorporate new RETS wording and clarify that "from the site" means to areas at and beyond the SITE BOUNDARY.

12. Specification 3/4.11.3 is revised to incorporate new RETS wording.

13. Specification 3/4.12.1 is revised to incorporate new RETS wording. In addition, minor clarifications are made to ACTION "c" to specify broadleaf vegetable samples versus leafy vegetable samples and to require reporting of replacement sample location in the "Annual Radiological Environmental Operating Report" which is more appropriate than the "Semiannual Radioactive Effluent Report" suggested by the RETS. Surveillance requirement 4.12.1 is editorially revised for greater clarity.

14. Table 3.12-1 Radiological Environmental Monitoring Program is revised as follows:

A. Item 3b was transferred directly from RETS which assumes the units discharge liquid effluent into a fresh water body which could be used for drinking water. Consistent with Regulatory Guide 1.109 Appendix A, this requirement does not apply to units discharging to oceans. Item 3b is therefore deleted.

B. The word "leafy" in Item 4b is replaced with "broadleaf".

C. Note "f" is deleted in its entirety. This footnote, transferred directly from RETS, assumes that the units use a fresh water river as the ultimate heat sink. For units on nonflowing bodies of water, this note is meaningless and therefore is deleted.

15. Table 4.12-1, Maximum Values for the Lower Limits of Detection is revised as follows:

    A. Note "a" is revised consistent with the new RETS wording.

    B. Note "b" is deleted since there are no drinking water pathways.

16. Specification 3/4.12.2. Land Use Census is revised as follows:

    A. "Broadleaf" is substituted for "leafy".

    B. ACTION "a" incorporates revised RETS wording but requires reports to be made in the "Annual Radiological Environmental Operating Report" versus the "Semiannual Radioactive Effluent Release Reports".

    C. The unnecessary restriction to conduct the land use census between June 1 and October 1, is deleted from Surveillance Requirement 4.12.2 in that it is inconsistent with the RETS. Revised RETs wording is incorporated.

17. Specification 3/4.12.3, Interlaboratory Comparison Program is revised to delete the reference to the ODCM from the Surveillance requirement. The ODCM does not, nor is required to, address the Interlaboratory Comparison Program.

Safety Analysis

The proposed change discussed above shall be deemed to involve a significant hazards consideration if there is a positive finding in any one of the following areas:

1. Will operation of the facility in accordance with this proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

   Response: No

   The proposed change clarifies requirements relating to radioactive effluents and radiological environmental monitoring and is unrelated to any previously evaluated accident. As such, the proposed change does not affect the probability or consequences of any previously evaluated accident.

2. Will operation of the facility in accordance with this proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

   Response: No

   The proposed change is essentially editorial in nature and does not alter the configuration of the plant or its operation. Therefore, the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

3. Will operation of the facility in accordance with the proposed change involve a significant reduction in a margin of safety?

Response: No

As stated above, the proposed change does not affect any radioactive effluent release limits. The proposed change does involve two reductions in existing requirements. Item 8 of the above description reduces the gaseous effluent analyses requirements for some situations provided certain specified conditions are met. If these conditions are met, then the required sampling is meaningless. No reduction in a margin of safety is involved.

Item 14 of the above description, removes requirements which were transferred from the Standard Technical Specifications but are only applicable to units which use fresh water rivers as their ultimate heat sink and liquid radwaste discharge path. This revision is editorial in nature and although it involves a reduction in existing requirements, it does not involve a decrease in any margin of safety.

48 FR 14864 dated April 6, 1983, provided examples of amendments not likely to involve a significant hazards consideration. The proposed change, with the exception of Item 8, described above is similar to example (i) in that it is editorial in nature. Because Item 8 involves a reduction in existing Technical Specification requirements, it would likely be considered most similar to example (vi), even though no safety margin is reduced.

Safety and Significant Hazards Determination

Based on the Safety Analysis, it is concluded that: (1) the proposed change does not involve a significant hazards consideration as defined by 10 CFR 50.92; and (2) there is reasonable assurance that the health and safety of the public will not be endangered by the proposed change; and (3) this action will not result in a condition which significantly alters the impact of the station on the environment as described in the NRC Final Environmental Statement.

PWS:0970F

Attachment "A"

3/4.11 RADIOACTIVE EFFLUENTS

3/4.11.1 LIQUID EFFLUENTS

CONCENTRATION

LIMITING CONDITION FOR OPERATION

3.11.1.1 The concentration of radioactive material released from the site (see Figure 5.1-4) shall be limited to the concentrations specified in 10 CFR Part 20, Appendix B, Table II, Column 2 for radionuclides other than dissolved or entrained noble gases. For dissolved or entrained noble gases, the concentration shall be limited to 2×10^{-4} microcuries/ml total activity.

APPLICABILITY: At all times.

ACTION:

With the concentration of radioactive material released from the site exceeding the above limits, immediately restore the concentration to within the above limits.

SURVEILLANCE REQUIREMENTS

4.11.1.1.1 The radioactivity content of each batch of radioactive liquid waste shall be determined prior to release by sampling and analysis in accordance with Table 4.11-1. The results of pre-release analyses shall be used with the calculational methods in the ODCM to assure that the concentration at the point of release is maintained within the limits of Specification 3.11.1.1.

4.11.1.1.2 Post-release analyses of samples composited from batch releases shall be performed in accordance with Table 4.11-1. The results of the previous post-release analyses shall be used with the calculational methods in the ODCM to assure that the concentrations at the point of release were maintained within the limits of Specification 3.11.1.1.

4.11.1.1.3 The radioactivity concentration of liquids discharged from continuous release points shall be determined by collection and analysis of samples in accordance with Table 4.11-1. The results of the analyses shall be used with the calculational methods in the ODCM to assure that the concentrations at the point of release are maintained within the limits of Specification 3.11.1.1.

TABLE 4.11-1

RADIOACTIVE LIQUID WASTE SAMPLING AND ANALYSIS PROGRAM

Liquid Release Type	Sampling Frequency	Minimum Analysis Frequency	Type of Activity Analysis	Lower Limit of Detection (LLD) (μCi/ml)[a]
A. Batch Waste Release Tanks[d]	P Each Batch	P Each Batch	Principal Gamma Emitters[f]	5×10^{-7}
1. Primary Plant Makeup Storage Tanks			I-131	1×10^{-6}
2. Radwaste Primary Tanks	P One Batch/M	M	Dissolved and Entrained Gases (Gamma emitters)	1×10^{-5}
3. Radwaste Secondary Tanks	P Each Batch	M Composite[b]	H-3	1×10^{-5}
4. Miscellaneous Waste Condensate Monitor Tanks			Gross Alpha	1×10^{-7}
5. Neutralization Sump	P Each Batch	Q Composite[b]	Sr-89, Sr-90	5×10^{-8}
			Fe-55	1×10^{-6}
B. Continuous Releases[e,#]	D Grab Sample	W Composite[c]	Principal Gamma Emitters[f]	5×10^{-7}
1. Steam Generator Blowdown			I-131	1×10^{-6}
2. Turbine Building Sump	M Grab Sample	M	Dissolved and Entrained Gases (Gamma Emitters)	1×10^{-5}
3. Miscellaneous Waste Evaporator Condensate*	D Grab Sample	M Composite[c]	H-3	1×10^{-5}
4. Salt Water Discharge From Component Cooling Heat Exchanger			Gross Alpha	1×10^{-7}
Steam Generator Blowdown Bypass##**	D Grab Sample	Q Composite[c]	Sr-89, Sr-90	5×10^{-8}
			Fe-55	1x10-6

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AMENDMENT NO. 19

TABLE 4.11-1 (Continued)

TABLE NOTATION

a. The LLD is the smallest concentration of radioactive material in a sample that will be detected with 95% probability with 5% probability of falsely concluding that a blank observation represents a "real" signal.

For a particular measurement system (which may include radiochemical separation):

$$LLD = \frac{4.66\ s_b}{E \cdot V \cdot 2.22 \times 10^6 \cdot Y \cdot \exp(-\lambda \Delta t)}$$

Where:

LLD is the "a priori" lower limit of detection as defined above (as microcurie per unit mass or volume),

s_b is the standard deviation of the background counting rate or of the counting rate of a blank sample as appropriate (as counts per minute),

E is the counting efficiency (as counts per transformation),

V is the sample size (in units of mass or volume),

2.22×10^6 is the number of transformations per minute per microcurie,

Y is the fractional radiochemical yield (when applicable),

λ is the radioactive decay constant for the particular radionuclide, and

Δt is the elapsed time between midpoint of sample collection and time of counting (for plant effluents, not environmental samples).

The value of s_b used in the calculation of the LLD for a particular measurement system shall be based on the actual observed variance of the background counting rate or of the counting rate of the blank samples (as appropriate) rather than on an unverified theoretically predicted variance.

In calculating the LLD for a radionuclide determined by gamma ray spectrometry, the background should include the typical contributions of other radionuclides normally present in the samples. Typcial values of E, V, Y and Δt should be used in the calculation.

It should be recognized that the LLD is defined as an a priori (before the fact) limit representing the capability of the measurement system and not as a posteriori (after the fact) limit for a particular measurement.*

*For a more complete discussion of the LLD, and other detection limits, see the following:
(1) HASL Procedures Manual, HASL-300 (revised annually).
(2) Currie, L. A., "Limits for Qualitative Detection and Quantitative Determination - Application to Radiochemistry" Anal. Chem. 40, 586-93 (1968).
(3) Hartwell, J. K., "Detection Limits for Radioisotopic Counting Techniques," Atlantic Richfield Hanford Company Report ARH-2537 (June 22, 1972).

FEB 17 [illegible]

TABLE 4.11-1 (Continued)

TABLE NOTATION

b. A composite sample is one in which the quantity of liquid sampled is proportional to the quantity of liquid waste discharged and in which the method of sampling employed results in a specimen which is representative of the liquids released.

c. To be representative of the quantities and concentrations of radioactive materials in liquid effluents, samples shall be collected continuously in proportion to the rate of flow of the effluent stream. Prior to analyses, all samples taken for the composite shall be thoroughly mixed in order for the composite sample to be representative of the effluent release.

d. A batch release is the discharge of liquid wastes of a discrete volume. Prior to sampling for analyses, each batch shall be isolated, and then thoroughly mixed, by a method described in the ODCM, to assure representative sampling.

e. A continuous release is the discharge of liquid wastes of a nondiscrete volume; e.g., from a volume of system that has an input flow during the continuous release.

f. The principal gamma emitters for which the LLD specification applies exclusively are the following radionuclides: Mn-54, Fe-59, Co-58, Co-60, Zn-65, Mo-99, Cs-134, Cs-137, Ce-141, and Ce-144. This list does not mean that only these nuclides are to be detected and reported. Other peaks which are measurable and identifiable, together with the above nuclides, shall also be identified and reported.

* Sampling of this flow is not required if, at least once per 31 days, condensate monitor tank bypass valve, SA 1415-2½"-200, is verified locked shut.

\# Administrative controls shall provide for composite sampling of the continuous releases per note b vice note c until January 1, 1983. Continuous proportional sampling shall be in accordance with note c from January 1, 1983 and all times subsequent as required by Table 4.11-1.

\## Administrative controls shall provide for composite sampling of the continuous releases per note b vice note c until January 1, 1984. Continuous proportional sampling shall be in accordance with note c from January 1, 1984 and all times subsequent as required by Table 4.11-1.

** Sampling of this flow is not required if at least once per 31 days blowdown bypass isolation valve (S21301MU618 for Steam Generator E088 and S21301MU619 for Steam Generator E089) is verified locked shut.

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RADIOACTIVE EFFLUENTS

DOSE

LIMITING CONDITION FOR OPERATION

3.11.1.2 The dose or dose commitment to an individual from radioactive materials in liquid effluents released, from each reactor unit, from the site (see Figure 5.1-4) shall be limited:

a. During any calendar quarter to less than or equal to 1.5 mrem to the total body and to less than or equal to 5 mrem to any organ, and

b. During any calendar year to less than or equal to 3 mrem to the total body and to less than or equal to 10 mrem to any organ.

APPLICABILITY: At all times.

ACTION:

a. With the calculated dose from the release of radioactive materials in liquid effluents exceeding any of the above limits, in lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report which identifies the cause(s) for exceeding the limit(s) and defines the corrective actions taken to reduce the releases and the proposed actions to be taken to assure that subsequent releases will be in compliance with Specification 3.11.1.2

b. The provisions of specifications 3.0.3, 3.0.4 and 6.9.1.13b are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.1.2 Dose Calculations. Cumulative dose contributions from liquid effluents shall be determined in accordance with the ODCM at least once per 31 days.

RADIOACTIVE EFFLUENTS

LIQUID WASTE TREATMENT

LIMITING CONDITION FOR OPERATION

3.11.1.3 The liquid radwaste treatment system shall be OPERABLE. The appropriate portions of the system shall be used to reduce the radioactive materials in liquid wastes prior to their discharge when the projected doses due to the liquid effluent from the site (see Figure 5.1-4) when averaged over 31 days, would exceed 0.06 mrem to the total body or 0.2 mrem to any organ.*

APPLICABILITY: At all times.

ACTION:

a. With the liquid radwaste treatment system inoperable for more than 31 days or with radioactive liquid waste being discharged without treatment and in excess of the above limits, in lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission within 30 days pursuant to Specification 6.9.2 a Special Report which includes the following information:

   1. Identification of the inoperable equipment or subsystems and the reason for inoperability,

   2. Action(s) taken to restore the inoperable equipment to OPERABLE status, and

   3. Summary description of action(s) taken to prevent a recurrence.

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.1.3.1 Doses due to liquid releases shall be projected at least once per 31 days, in accordance with the ODCM.

4.11.1.3.2 The liquid radwaste treatment system shall be demonstrated OPERABLE by operating the liquid radwaste treatment system equipment for at least 15 minutes at least once per 92 days unless the liquid radwaste system has been utilized to process radioactive liquid effluents during the previous 92 days.

* Per reactor unit

LIQUID HOLDUP TANKS

LIMITING CONDITION FOR OPERATION

3.11.1.4 The quantity of radioactive material contained in each outside temporary tank shall be limited to less than or equal to 10 curies, excluding tritium and dissolved or entrained noble gases.

APPLICABILITY: At all times.

ACTION:

a. With the quantity of radioactive material in any outside temporary tank exceeding the above limit, immediately suspend all additions of radioactive material to the tank and within 48 hours reduce the tank contents to within the limit.

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.1.4 The quantity of radioactive material contained in each outside temporary tank shall be determined to be within the above limit by analyzing a representative sample of the tank's contents at least once per 7 days when radioactive materials are being added to the tank.

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RADIOACTIVE EFFLUENTS

3/4.11.2 GASEOUS EFFLUENTS

DOSE RATE

LIMITING CONDITION FOR OPERATION

3.11.2.1 The dose rate in unrestricted areas due to radioactive materials released in gaseous effluents from the site (see Figure 5.1-3) shall be limited to the following:

a. For noble gases: Less than or equal to 500 mrem/yr to the total body and less than or equal to 3000 mrem/yr to the skin, and

b. For all radioiodines, tritium and for all radioactive materials in particulate form with half lives greater than 8 days: Less than or equal to 1500 mrem/yr to any organ.

APPLICABILITY: At all times.

ACTION:

With the dose rate(s) exceeding the above limits, immediately decrease the release rate to within the above limit(s).

SURVEILLANCE REQUIREMENTS

4.11.2.1.1 The dose rate due to noble gases in gaseous effluents shall be determined to be within the above limits in accordance with the methods and procedures of the ODCM.

4.11.2.1.2 The dose rate due to radioiodines, tritium and radioactive materials in particulate form with half lives greater than 8 days in gaseous effluents shall be determined to be within the above limits in accordance with the methods and procedures of the ODCM by obtaining representative samples and performing analyses in accordance with the sampling and analysis program specified in Table 4.11-2.

ACTION 38 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, immediately suspend PURGING of radioactive effluents via this pathway

OR

Prior to completion of DCP53N, and with Plant Vent Stack Monitor 2RT-7865-1 not capable of terminating containment purge release, PURGING may continue using 2RT-7865-1 provided that:

1) Plant Vent Stack Monitor 2RT-7865-1 is aligned to the purge stack for the duration of the purge; and,

2) Plant Vent Stack Monitor 2/3 RT-7808 or 3RT-7865-1 is OPERABLE and aligned to the plant vent stack; and,

3) When PURGING is complete, 2RT-7865-1 is realigned to the plant vent stack; and,

4) In the event of a high activity alarm during the PURGE from any of 2RT-7865-1, 3RT-7865-1 or 2/3 RT-7808, an operator immediately suspends containment PURGING and re-aligns 2RT-7865-1 to the Plant Vent Stack.

Notes Cont'd

4) 2 RT-7818 is not equipped to monitor process flow. If another means of continuously monitoring process flow is not available, then comply with ACTION 36.

5) 2/3 RT-7808 is not equipped to monitor plant vent stack flow. If another means of continuously monitoring plant vent stack flow is not available, then comply with ACTION 36.

RADIOACTIVE GASEOUS WASTE SAMPLING AND ANALYSIS PROGRAM

Gaseous Release Type	Sampling Frequency	Minimum Analysis Frequency	Type of Activity Analysis	Lower Limit of Detection (LLD) (μCi/ml)[d]
A. Waste Gas Storage Tank	P Each Tank Grab Sample	P Each Tank	Principal Gamma Emitters[g]	$1x10^{-4}$
B. Containment Purge 42 inch	P Each Purge[b,c]	P Each Purge[b]	Principal Gamma Emitters[g]	$1x10^{-4}$
			H-3	$1x10^{-6}$
8 inch	M[b] Grab Sample	M[b]	Principal Gamma Emmitters[g]	$1x10^{-4}$
			H-3	$1x10^{-6}$
C. 1. Condenser Evacuation System	M[b] Grab Sample	M[b]	Principal Gamma Emitters[g]	$1x10^{-4}$
			H-3	$1x10^{-6}$
2. Plant Vent Stack	W[b,e]	W[b]		
D. All Release Types as listed in B and C above.	Continuous[f] Sampler	W[d] Charcoal Sample	I-131	$1x10^{-12}$
			I-133	$1x10^{-10}$
	Continuous[f] Sampler	W[d] Particulate Sample	Principal Gamma Emitters[g] (I-131, Others)	$1x10^{-11}$
	Continuous[f] Sampler	M Composite Particulate Sample	Gross Alpha	$1x10^{-11}$
	Continuous[f] Sampler	Q Composite Particulate Sample	Sr-89, Sr-90	$1x10^{-11}$
	Continuous[f] Monitor	Noble Gas Monitor	Noble Gases Gross Beta or Gamma	$1x10^{-6}$

TABLE 4.11-2 (Continued)

TABLE NOTATION

a. The LLD is the smallest concentration of radioactive material in a sample that will be detected with 95% probability with 5% probability of falsely concluding that a blank observation represents a "real" signal.

For a particular measurement system (which may include radiochemical separation):

$$LLD = \frac{4.66\ s_b}{E \cdot V \cdot 2.22 \times 10^6 \cdot Y \cdot \exp(-\lambda \Delta t)}$$

Where:

LLD is the "a priori" lower limit of detection as defined above (as microcurie per unit mass or volume),

s_b is the standard deviation of the background counting rate or of the counting rate of a blank sample as appropriate (as counts per minute),

E is the counting efficiency (as counts per transformation),

V is the sample size (in units of mass or volume),

2.22×10^6 is the number of transformations per minute per microcurie,

Y is the fractional radiochemical yield (when applicable),

λ is the radioactive decay constant for the particular radionuclide, and

Δt is the elapsed time between midpoint of sample collection and time of counting (for plant effluents, not environmental samples).

The value of s_b used in the calculation of the LLD for a particular measurement system shall be based on the actual observed variance of the background counting rate or of the counting rate of the blank samples (as appropriate) rather than on an unverified theoretically predicted variance.

In calculating the LLD for a radionuclide determine by gamma ray spectrometry, the background should include the typical contributions of other radionuclides normally present in the samples. Typical values of E, V, Y and Δt should be used in the calculation.

It should be recognized that the LLD is defined as an a priori (before the fact) limit representing the capability of the measurement system and not as a posteriori (after the fact) limit for a particular measurement.*

*For a more complete discussion of the LLD, and other detection limits, see the following:
(1) HASL Procedures Manual, HASL-300 (revised annually).
(2) Currie, L. A., "Limits for Qualitative Detection and Quantitative Determination - Application to Radiochemistry" Anal. Chem. 40, 586-93 (1968).
(3) Hartwell, J. K., "Detection Limits for Radioisotopic Counting Techniques," Atlantic Richfield Hanford Company Report ARH-2537 (June 22, 1972).

TABLE 4.11-2 (Continued)

TABLE NOTATION

b. Analyses shall also be performed following shutdown, startup, or a THERMAL POWER change exceeding 15 percent of the RATED THERMAL POWER within a one hour period.

c. Tritium grab samples shall be taken at least once per 24 hours when the refueling canal is flooded.

d. Samples shall be changed at least once per 7 days and analyses shall be completed within 48 hours after changing (or after removal from sampler). Sampling shall also be performed at least once per 24 hours for at least 7 days following each shutdown, startup or THERMAL POWER change exceeding 15 percent of RATED THERMAL POWER in one hour and analyses shall be completed within 48 hours of changing. When samples collected for 24 hours are analyzed, the corresponding LLD's may be increased by a factor of 10.

e. Tritium grab samples shall be taken at least once per 7 days from the ventilation exhaust from the spent fuel pool area, whenever spent fuel is in the spent fuel pool.

f. The ratio of the sample flow rate to the sampled stream flow rate shall be known for the time period covered by each dose or dose rate calculation made in accordance with Specifications 3.11.2.1, 3.11.2.2 and 3.11.2.3.

g. The principal gamma emitters for which the LLD specification applies exclusively are the following radionuclides: Kr-87, Kr-88, Xe-133, Xe-133m, Xe-135, and Xe-138 for gaseous emissions and Mn-54, Fe-59, Co-58, Co-60, Zn-65, Mo-99, Cs-134, Cs-137, Ce-141 and Ce-144 for particulate emissions. This list does not mean that only these nuclides are to be detected and reported. Other peaks which are measureable and identifiable, together with the above nuclides, shall also be identified and reported.

RADIOACTIVE EFFLUENTS

DOSE - NOBLE GASES

LIMITING CONDITION FOR OPERATION

3.11.2.2 The air dose due to noble gases released in gaseous effluents, from each reactor unit, from the site (see Figure 5.1-3) shall be limited to the following:

a. During any calendar quarter: Less than or equal to 5 mrad for gamma radiation and less than or equal to 10 mrad for beta radiation and,

b. During any calendar year: Less than or equal to 10 mrad for gamma radiation and less than or equal to 20 mrad for beta radiation.

APPLICABILITY: At all times.

ACTION

a. With the calculated air dose from radioactive noble gases in gaseous effluents exceeding any of the above limits, in lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report which identifies the cause(s) for exceeding the limit(s) and defines the corrective actions taken to reduce releases and the proposed corrective actions to be taken to assure that subsequent releases will be in compliance with Specification 3.11.2.2.

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.2 Dose Calculations Cumulative dose contributions for the current calendar quarter and current calendar year shall be determined in accordance with the ODCM at least once per 31 days.

RADIOACTIVE EFFLUENTS

DOSE - RADIOIODINES, RADIOACTIVE MATERIALS IN PARTICULATE FORM AND TRITIUM

LIMITING CONDITION FOR OPERATION

3.11.2.3 The dose to an individual from tritium, radioiodines and radioactive materials in particulate form with half-lives greater than 8 days in gaseous effluents released, from each reactor unit, from the site (see Figure 5.1-3) shall be limited to the following:

a. During any calendar quarter: Less than or equal to 7.5 mrem to any organ and,

b. During any calendar year: Less than or equal to 15 mrem to any organ.

APPLICABILITY: At all times.

ACTION:

a. With the calculated dose from the release of tritium, radioiodines, and radioactive materials in particulate form, with half lives greater than 8 days, in gaseous effluents exceeding any of the above limits, in lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report which identifies the cause(s) for exceeding the limit and defines the corrective actions taken to reduce releases and the proposed actions to be taken to assure that subsequent releases will be in compliance with Specification 3.11.2.3.

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.3 Dose Calculations Cumulative dose contributions for the current calendar quarter and current calendar year shall be determined in accordance with the ODCM at least once per 31 days.

RADIOACTIVE EFFLUENTS

GASEOUS RADWASTE TREATMENT

LIMITING CONDITION FOR OPERATION

3.11.2.4 The GASEOUS RADWASTE TREATMENT SYSTEM and the VENTILATION EXHAUST TREATMENT SYSTEM shall be OPERABLE. The appropriate portions of the GASEOUS RADWASTE TREATMENT SYSTEM shall be used to reduce radioactive materials in gaseous waste prior to their discharge when the projected gaseous effluent air doses due to gaseous effluent releases from the site (see Figure 5.1-3), when averaged over 31 days, would exceed 0.2 mrad for gamma radiation and 0.4 mrad for beta radiation. The appropriate portions of the VENTILATION EXHAUST TREATMENT SYSTEM shall be used to reduce radioactive materials in gaseous waste prior to their discharge when the projected doses due to gaseous effluent releases from the site (see Figure 5.1-3) when averaged over 31 days would exceed 0.3 mrem to any organ.*

APPLICABILITY: At all times.

ACTION:

a. With the GASEOUS RADWASTE TREATMENT SYSTEM and/or the VENTILATION EXHAUST TREATMENT SYSTEM inoperable for more than 31 days or with gaseous waste being discharged without treatment and in excess of the above limits, in lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report which includes the following information:

   1. Identification of the inoperable equipment or subsystems and the reason for inoperability,

   2. Action(s) taken to restore the inoperable equipment to OPERABLE status, and

   3. Summary description of action(s) taken to prevent a recurrence.

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.4.1 Doses due to gaseous releases from the site shall be projected at least once per 31 days, in accordance with the ODCM.

4.11.2.4.2 The GASEOUS RADWASTE TREATMENT SYSTEM and VENTILATION EXHAUST TREATMENT SYSTEM shall be demonstrated OPERABLE by operating the GASEOUS RADWASTE TREATMENT SYSTEM equipment and VENTILATION EXHAUST TREATMENT SYSTEM equipment for at least 15 minutes, at least once per 92 days unless the appropriate system has been utilized to process radioactive gaseous effluents during the previous 92 days.

*These doses are per reactor unit.

EXPLOSIVE GAS MIXTURE

LIMITING CONDITION FOR OPERATION

3.11.2.5 The concentration of oxygen in the waste gas holdup system shall be limited to less than or equal to 2% by volume whenever the hydrogen concentration exceeds 4% by volume.

APPLICABILITY: At all times.

ACTION:

a. With the concentration of oxygen in the waste gas holdup system greater than 2% by volume but less than or equal to 4% by volume, restore the concentration of oxygen to within the limit within 48 hours.

b. With the concentration of oxygen in the waste gas holdup system greater than 4% by volume, immediately suspend all additions of waste gases to the system and reduce the concentration of oxygen to less than 4% by volume within one hour and less than or equal to 2% by volume within 48 hours.

c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.5 The concentrations of hydrogen and oxygen in the waste gas holdup system shall be determined to be within the above limits by continuously monitoring the waste gases in the waste gas holdup system with the hydrogen and oxygen monitors required OPERABLE by Table 3.3-13 of Specification 3.3.3.9.

RADIOACTIVE EFFLUENTS

GAS STORAGE TANKS

LIMITING CONDITION FOR OPERATION

3.11.2.6 The quantity of radioactivity contained in each gas storage tank shall be limited to less than or equal to 134,000 curies noble gases (considered as Xe-133).

APPLICABILITY: At all times.

ACTION:

a. With the quantity of radioactive material in any gas storage tank exceeding the above limit, immediately suspend all additions of radioactive material to the tank and within 48 hours reduce the tank contents to within the limit.

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.6 The quantity of radioactive material contained in each gas storage tank shall be determined to be within the above limit at least once per 24 hours when radioactive materials are being added to the tank.

3/4.11.3 SOLID RADIOACTIVE WASTE

LIMITING CONDITION FOR OPERATION

3.11.3 The solid radwaste system shall be OPERABLE and used, as applicable in accordance with a PROCESS CONTROL PROGRAM, for the SOLIDIFICATION and packaging of radioactive wastes to ensure meeting the requirements of 10 CFR Part 20 and of 10 CFR Part 71 prior to shipment of radioactive wastes from the site.

APPLICABILITY: At all times.*

ACTION:

a. With the packaging requirements of 10 CFR Part 20 and/or 10 CFR Part 71 not satisfied, suspend shipments of defectively packaged solid radioactive wastes from the site.

b. With the solid radwaste system inoperable for more than 31 days, in lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission within 30 days pursuant to Specification 6.9.2 a Special Report which includes the following information:

   1. Identification of the inoperable equipment or subsystems and the reason for inoperability,

   2. Action(s) taken to restore the inoperable equipment to OPERABLE status,

   3. A description of the alternative used for SOLIDIFICATION and packaging of radioactive wastes, and

   4. Summary description of action(s) taken to prevent a recurrence.

c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.3.1 The solid radwaste system shall be demonstrated OPERABLE at least once per 92 days by:

a. Operating the solid radwaste system at least once in the previous 92 days in accordance with the PROCESS CONTROL PROGRAM, or

b. Verification of the existence of a valid contract for SOLIDIFICATION to be performed by a contractor in accordance with a PROCESS CONTROL PROGRAM.

*See Specification 6.13.1.

SURVEILLANCE REQUIREMENTS (Continued)

4.11.3.2 THE PROCESS CONTROL PROGRAM shall be used to verify the SOLIDIFICATION of at least one representative test specimen from at least every tenth batch of each type of wet radioactive waste (e.g., filter sludges, spent resins, other than dewatered bead type, evaporator bottoms, boric acid solutions, and sodium sulfate solutions).

a. If any test specimen fails to verify SOLIDIFICATION, the SOLIDIFICATION of the batch under test shall be suspended until such time as additional test specimens can be obtained, alternative SOLIDIFICATION parameters can be determined in accordance with the PROCESS CONTROL PROGRAM, and a subsequent test verifies SOLIDIFICATION. SOLIDIFICATION of the batch may then be resumed using the alternative SOLIDIFICATION parameters determined by the PROCESS CONTROL PROGRAM.

b. If the initial test specimen from a batch of waste fails to verify SOLIDIFICATION, the PROCESS CONTROL PROGRAM shall provide for the collection and testing of representative test specimens from each consecutive batch of the same type of wet waste until at least 3 consecutive initial test specimens demonstrate SOLIDIFICATION. The PROCESS CONTROL PROGRAM shall be modified as required, as provided in Specification 6.13, to assure SOLIDIFICATION of subsequent batches of waste.

3/4.11.4 TOTAL DOSE

LIMITING CONDITION FOR OPERATION

3.11.4 The dose or dose commitment to any member of the public, due to releases of radioactivity and radiation, from uranium fuel cycle sources shall be limited to less than or equal to 25 mrem to the total body or any organ (except the thyroid, which shall be limited to less than or equal to 75 mrem) over 12 consecutive months.

APPLICABILITY: At all times.

ACTION:

a. With the calculated doses from the release of radioactive materials in liquid or gaseous effluents exceeding twice the limits of Specification 3.11.1.2.a, 3.11.1.2.b, 3.11.2.2.a, 3.11.2.2.b, 3.11.2.3.a, or 3.11.2.3.b, in lieu of any other report required by Specification 6.9.1, prepare and submit a Special Report to the Director, Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, within 30 days, which defines the corrective action to be taken to reduce subsequent releases to prevent recurrence of exceeding the limits of Specification 3.11.4. This Special Report shall include an analysis which estimates the radiation exposure (dose) to a member of the public from uranium fuel cycle sources (including all effluent pathways and direct radiation) for a 12 consecutive month period that includes the release(s) covered by this report. If the estimated dose(s) exceeds the limits of Specification 3.11.4, and if the release condition resulting in violation of 40 CFR 190 has not already been corrected, the Special Report shall include a request for a variance in accordance with the provisions of 40 CFR 190 and including the specified information of § 190.11(b). Submittal of the report is considered a timely request, and a variance is granted until staff action on the request is complete. The variance only relates to the limits of 40 CFR 190, and does not apply in any way to the requirements for dose limitation of 10 CFR Part 20, as addressed in other sections of this technical specification.

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.4 Dose Calculations Cumulative dose contributions from liquid and gaseous effluents shall be determined in accordance with Specifications 4.11.1.2, 4.11.2.2, and 4.11.2.3, and in accordance with the ODCM.

3/4.12 RADIOLOGICAL ENVIRONMENTAL MONITORING

3/4.12.1 MONITORING PROGRAM

LIMITING CONDITION FOR OPERATION

3.12.1 The radiological environmental monitoring program shall be conducted as specified in Table 3.12-1.

APPLICABILITY: At all times.

ACTION:

a. With the radiological environmental monitoring program not being conducted as specified in Table 3.12-1, in lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission, in the Annual Radiological Operating Report, a description of the reasons for not conducting the program as required and the plans for preventing a recurrence.

b. With the level of radioactivity in an environmental sampling medium exceeding the reporting levels of Table 3.12-2 when averaged over any calendar quarter, in lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission within 30 days from the end of the affected calendar quarter a Report pursuant to Specification 6.9.1.13. When more than one of the radionuclides in Table 3.12-2 are detected in the sampling medium, this report shall be submitted if:

$$\frac{\text{concentration (1)}}{\text{limit level (1)}} + \frac{\text{concentration (2)}}{\text{limit level (2)}} + \ldots \geq 1.0$$

When radionuclides other than those in Table 3.12-2 are detected and are the result of plant effluents, this report shall be submitted if the potential annual dose to an individual is equal to or greater than the calendar year limits of Specifications 3.11.1.2, 3.11.2.2 and 3.11.2.3. This report is not required if the measured level of radioactivity was not the result of plant effluents; however, in such an event, the condition shall be reported and described in the Annual Radiological Environmental Operating Report.

c. With fresh leafy vegetable samples or fleshy vegetable samples unavailable from one or more of the sample locations required by Table 3.12-1, in lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report which identifies the cause of the unavailability of samples and identifies locations for obtaining replacement samples. The locations from which samples were unavailable may then be deleted from those required by Table 3.12-1, provided the locations from which the replacement samples were obtained are added to the environmental monitoring program as replacement locations.

d. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.12.1 The radiological environmental monitoring samples shall be collected pursuant to Table 3.12-1 from the locations given in the table and figure in the ODCM and shall be analyzed pursuant to the requirements of Tables 3.12-1 and 4.12-1.

TABLE 3.12-1

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

Exposure Pathway and/or Sample	Number of Samples and Sample Locations[a]	Sampling and Collection Frequency[a]	Type and Frequency of Analyses
1. AIRBORNE Radioiodine and Particulates	Samples from at least 5 locations 3 samples from offsite locations (in different sectors) of the highest calculated annual average groundlevel D/Q. 1 sample from the vicinity of a community having the highest calculated annual average groundlevel D/Q. 1 sample from a control location 15-30 km (10-20 miles) distant and in the least prevalent wind direction[c]	Continuous operation of sampler with sample collection as required by dust loading but at least once per 7 days.[d]	Radioiodine cartridge. Analyze at least once per 7 days for I-131. Particulate sampler. Analyze for gross beta radioactivity $\geq$ 24 hours following filter change. Perform gamma isotopic[b] analysis on each sample when gross beta activity is > 10 times the yearly mean of control samples. Perform gamma isotopic analysis on composite (by location) sample at least once per 92 days.
2. DIRECT RADIATION[e]	At least 30 locations including an inner ring of stations in the general area of the site boundary and an outer ring approximately in the 4 to 5 mile range from the site with a station in each sector of each ring. The balance of the stations are in special interest areas such as population centers, nearby residences, schools, and in 2 or 3 areas to serve as control stations.	At least once per 92 days.	Gamma dose. At least once per 92 days.

TABLE 3.12-1 (Continued)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

Exposure Pathway and/or Sample	Number of Samples and Sample Locations[a]	Sampling and Collection Frequency[a]	Type and Frequency of Analyses
3. WATERBORNE			
a. Ocean	4 Locations	At least once per month and composited[f] quarterly	Gamma isotopic analysis of each monthly sample. Tritium analysis of composite sample at least once per 92 days.
b. Drinking	2 Locations	Monthly at each location.	Gamma isotopic and tritium analyses of each sample.
c. Sediment from Shoreline	4 Locations	At least once per 184 days.	Gamma isotopic analysis of each sample.
d. Ocean Bottom Sediments	5 Locations	At least once per 184 days.	Gamma isotopic analysis of each sample.

TABLE 3.12-1 (Continued)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

Exposure Pathway and/or Sample	Number of Samples and Sample Locations[a]	Sampling and Collection Frequency[a]	Type and Frequency of Analyses
4. INGESTION			
a. Nonmigratory Marine Animals	3 Locations	One sample in season, or at least once per 184 days if not seasonal. One sample of each of the following species: 1. Fish-2 adult species such as perch or sheepshead. 2. Crustaceae-such as crab or lobster. 3. Mollusks-such as limpets or seahares.	Gamma isotopic analysis on edible portions.
b. Local Crops	2 Locations	Representative vegetables, normally 1 leafy and 1 fleshy collected at harvest time. At least 2 vegetables collected semiannually from each location.	Gamma isotopic analysis on edible portions semiannually and I-131 analysis for leafy crops.

TABLE NOTATION

a. Sample locations are indicated in the ODCM

b. Gamma isotopic analysis means the identification and quantification of gamma-emitting radionuclides that may be attributable to the effluents from the facility.

c. The purpose of this sample is to obtain background information. If it is not practical to establish control locations in accordance with the distance and wind direction criteria, other sites which provide valid background data may be substituted.

d. Canisters for the collection of radioiodine in air are subject to channeling. These devices should be carefully checked before operation in the field or several should be mounted in series to prevent loss of iodine.

e. Regulatory Guide 4.13 provides minimum acceptable performance criteria for thermoluminescence dosimetry (TLD) systems used for environmental monitoring. One or more instruments, such as a pressurized ion chamber, for measuring and recording dose rate continuously may be used in place of, or in addition to, integrating dosimeters. For the purposed of this table, a thermoluminescent dosimeter may be considered to be one phosphor and two or more phosphors in a packet may be considered as two or more dosimeters. Film badges should not be used for measuring direct radiation.

f. Composite samples should be collected with equipment (or equivalent) which is capable of collecting an aliquot at time intervals which are very short (e.g., hourly) relative to the compositing period (e.g., monthly).

TABLE 3.12-2

REPORTING LEVELS FOR RADIOACTIVITY CONCENTRATIONS IN ENVIRONMENTAL SAMPLES

Analysis	Reporting Levels			
	Water (pCi/l)	Airborne Particulate or Gases (pCi/m^3)	Marine Animals (pCi/Kg, wet)	Local Crops (pCi/Kg, wet)
H-3	2×10^4(a)			
Mn-54	1×10^3		3×10^4	
Fe-59	4×10^2		1×10^4	
Co-58	1×10^3		3×10^4	
Co-60	3×10^2		1×10^4	
Zn-65	3×10^2		2×10^4	
Zr-Nb-95	4×10^2			
I-131	2	0.9		1×10^2
Cs-134	30	10	1×10^3	1×10^3
Cs-137	50	20	2×10^3	2×10^3
Ba-La-140	2×10^2			

(a) For drinking water samples. This is 40 CFR Part 141 value.

TABLE 4.12-1

MAXIMUM VALUES FOR THE LOWER LIMITS OF DETECTION (LLD)[a,c]

Analysis	Water (pCi/l)	Airborne Particulate or Gas (pCi/m^3)	Marine Animals (pCi/kg, wet)	Local Crops (pCi/kg, wet)	Sediment (pCi/kg, dry)
gross beta	4	1×10^{-2}			
H-3	2000				
Mn-54	15		130		
Fe-59	30		260		
Co-58, 60	15		130		
Zn-65	30		260		
Zr-95	30				
Nb-95	15				
I-131	1[b]	7×10^{-2}		60	
Cs-134	15	5×10^{-2}	130	60	150
Cs-137	18	6×10^{-2}	150	80	180
Ba-140	60				
La-140	15				

TABLE 4.12-1 (Continued)

TABLE NOTATION

a. The LLD is the smallest concentration of radioactive material in a sample that will be detected with 95% probability with 5% probability of falsely concluding that a blank observation represents a "real" signal.

For a particular measurement system (which may include radiochemical separation):

$$LLD = \frac{4.66\ s_b}{E \cdot V \cdot 2.22 \cdot Y \cdot \exp(-\lambda \Delta t)}$$

Where:

LLD is the "a priori" lower limit of detection as defined above (as picocurie per unit mass or volume),

s_b is the standard deviation of the background counting rate or of the counting rate of a blank sample as appropriate (as counts per minute),

E is the counting efficiency (as counts per transformation),

V is the sample size (in units of mass or volume),

2.22 is the number of transformation per minute per picocurie,

Y is the fractional radiochemical yield (when applicable),

λ is the radioactive decay constant for the particular radionuclide, and

Δt is the elapsed time between sample collection (or end of the sample collection period) and time of counting (for environmental samples, not plant effluent samples).

The value of s_b used in the calculation of the LLD for a detection system shall be based on the actual observed variance of the background counting rate or of the counting rate of the blank samples (as appropriate) rather than on an unverified theoretically predicted variance. In calculating the LLD for a radionuclide determined by gamma-ray spectrometry, the background shall include the typical contributions of other radionuclides normally present in the samples (e.g., potassium-40 in milk samples). Typical values of E, V, Y and Δt shall be used in the calculations.

In calculating the LLD for a radionuclide determined by gamma-ray spectrometry, the background should include the typical contributions of other radionuclides normally present in the samples (e.g., potassium-40 in milk samples). Typical values of E, V, Y and Δt should be used in the calculation.

TABLE 4.12-1 (Continued)

TABLE NOTATION

It should be recognized that the LLD is defined as an a priori (before the fact) limit representing the capability of a measurement system and not as a posteriori (after the fact) limit for a particular measurement.*

b. LLD for drinking water.

c. Other peaks which are measurable and identifiable, together with the radionuclides in Table 4.12-1, shall be identified and reported.

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*For a more complete discussion of the LLD, and other detection limits, see the following:

(1) HASL Procedures Manual, HASL-300 (revised annually).
(2) Currie, L. A., "Limits for Qualitative Detection and Quantitative Determination - Application to Radiochemistry" Anal. Chem. 40, 586-93 (1968).
(3) Hartwell, J. K., "Detection Limits for Radioisotopic Counting Techniques," Atlantic Richfield Hanford Company Report ARH-2537 (June 22, 1972).

3/4.12.2 LAND USE CENSUS

LIMITING CONDITION FOR OPERATION

3.12.2 A land use census shall be conducted and shall identify the location of the nearest milk animal, the nearest residence and the nearest garden* of greater than 500 square feet producing fresh leafy vegetables in each of the 16 meteorological sectors within a distance of five miles. For elevated releases as defined in Regulatory Guide 1.111, Revision 1, July 1977, the land use census shall also identify the locations of all milk animals and all gardens of greater than 500 square feet producing fresh leafy vegetables in each of the 16 meteorological sectors within a distance of three miles.

APPLICABILITY: At all times.

ACTION:

a. With a land use census identifying a location(s) which yields a calculated dose or dose commitment greater than the values currently being calculated in Specification 4.11.2.3, in lieu of any other report required by Specification 6.9.1., prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report which identifies the new location(s).

b. With a land use census identifying a location(s) which yields a calculated dose or dose commitment via the same exposure pathway 20 percent greater than at a location from which samples are currently being obtained in accordance with Specification 3.12.1, in lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report which identifies the new location. The new location shall be added to the radiological environmental monitoring program within 30 days. The sampling location, excluding the control station location, having the lowest calculated dose or dose commitment via the same exposure pathway may be deleted from this monitoring program after October 31 of the year in which this land use census was conducted.

c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.12.2 The land use census shall be conducted at least once per 12 months between the dates of June 1 and October 1 using that information which will provide the best results, such as by a door-to-door survey, aerial survey, or by consulting local agriculture authorities.

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* Broad leaf vegetation sampling may be performed at the site boundary in the direction sector with the highest D/Q in lieu of the garden census.

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3/4.12.3 INTERLABORATORY COMPARISON PROGRAM

LIMITING CONDITION FOR OPERATION

3.12.3 Analyses shall be performed on radioactive materials supplied as part of an Interlaboratory Comparison Program which has been approved by the Commission.

APPLICABILITY: At all times.

ACTION:

a. With analyses not being performed as required above, report the corrective actions taken to prevent a recurrence to the Commission in the Annual Radiological Environmental Operating Report.

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.12.3 A summary of the results obtained as part of the above required Interlaboratory Comparison Program and in accordance with the ODCM shall be included in the Annual Radiological Environmental Operating Report.

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NPF-15-103

Attachment "B"

3/4.11 RADIOACTIVE EFFLUENTS

3/4.11.1 LIQUID EFFLUENTS

CONCENTRATION

LIMITING CONDITION FOR OPERATION

3.11.1.1 The concentration of radioactive material released from the site (see Figure 5.1-4) shall be limited to the concentrations specified in 10 CFR Part 20, Appendix B, Table II, Column 2 for radionuclides other than dissolved or entrained noble gases. For dissolved or entrained noble gases, the concentration shall be limited to 2×10^{-4} microcuries/ml total activity.

APPLICABILITY: At all times.

ACTION:

With the concentration of radioactive material released from the site exceeding the above limits, immediately restore the concentration to within the above limits.

SURVEILLANCE REQUIREMENTS

4.11.1.1.1 The radioactivity content of each batch of radioactive liquid waste shall be determined prior to release by sampling and analysis in accordance with Table 4.11-1. The results of pre-release analyses shall be used with the calculational methods in the ODCM to assure that the concentration at the point of release is maintained within the limits of Specification 3.11.1.1.

4.11.1.1.2 Post-release analyses of samples composited from batch releases shall be performed in accordance with Table 4.11-1. The results of the previous post-release analyses shall be used with the calculational methods in the ODCM to assure that the concentrations at the point of release were maintained within the limits of Specification 3.11.1.1.

4.11.1.1.3 The radioactivity concentration of liquids discharged from continuous release points shall be determined by collection and analysis of samples in accordance with Table 4.11-1. The results of the analyses shall be used with the calculational methods in the ODCM to assure that the concentrations at the point of release are maintained within the limits of Specification 3.11.1.1.

TABLE 4.11-1

RADIOACTIVE LIQUID WASTE SAMPLING AND ANALYSIS PROGRAM

Liquid Release Type	Sampling Frequency	Minimum Analysis Frequency	Type of Activity Analysis	Lower Limit of Detection (LLD) (μCi/ml)[a]
A. Batch Waste Release Tanks[d]	P Each Batch	P Each Batch	Principal Gamma Emitters[f]	5×10^{-7}
			I-131	1×10^{-6}
1. Primary Plant Makeup Storage Tanks 2. Radwaste Primary Tanks	P One Batch/M	M	Dissolved and Entrained Gases (Gamma emitters)	1×10^{-5}
3. Radwaste Secondary Tanks	P Each Batch	M Composite[b]	H-3	1×10^{-5}
4. Miscellaneous Waste Condensate Monitor Tanks			Gross Alpha	1×10^{-7}
5. Neutralization Sump	P Each Batch	Q Composite[b]	Sr-89, Sr-90	5×10^{-8}
			Fe-55	1×10^{-6}
B. Continuous Releases[e,#]	D Grab Sample	W Composite[c]	Principal Gamma Emitters[f]	5×10^{-7}
1. Steam Generator Blowdown			I-131	1×10^{-6}
2. Turbine Building Sump	M Grab Sample	M	Dissolved and Entrained Gases (Gamma Emitters)	1×10^{-5}
3. Miscellaneous Waste Evaporator Condensate*	D Grab Sample	M Composite[c]	H-3	1×10^{-5}
			Gross Alpha	1×10^{-7}
4. Salt Water Discharge From Component Cooling Heat Exchanger	D Grab Sample	Q Composite[c]	Sr-89, Sr-90	5×10^{-8}
			Fe-55	1×10^{-6}
Steam Generator Blowdown Bypass##**				

TABLE 4.11-1 (Continued)

TABLE NOTATION

a. The LLD is the smallest concentration of radioactive material in a sample that will be detected with 95% probability with 5% probability of falsely concluding that a blank observation represents a "real" signal.

For a particular measurement system (which may include radiochemical separation):

$$LLD = \frac{4.66\ s_b}{E \cdot V \cdot 2.22 \times 10^6 \cdot Y \cdot \exp(-\lambda \Delta t)}$$

Where:

LLD is the "a priori" lower limit of detection as defined above (as microcurie per unit mass or volume),

s_b is the standard deviation of the background counting rate or of the counting rate of a blank sample as appropriate (as counts per minute),

E is the counting efficiency (as counts per transformation),

V is the sample size (in units of mass or volume),

2.22×10^6 is the number of transformations per minute per microcurie,

Y is the fractional radiochemical yield (when applicable),

λ is the radioactive decay constant for the particular radionuclide, and

Δt is the elapsed time between midpoint of sample collection and time of counting (for plant effluents, not environmental samples).

The value of s_b used in the calculation of the LLD for a particular measurement system shall be based on the actual observed variance of the background counting rate or of the counting rate of the blank samples (as appropriate) rather than on an unverified theoretically predicted variance.

In calculating the LLD for a radionuclide determined by gamma ray spectrometry, the background should include the typical contributions of other radionuclides normally present in the samples. Typcial values of E, V, Y and Δt should be used in the calculation.

It should be recognized that the LLD is defined as an a priori (before the fact) limit representing the capability of the measurement system and not as a posteriori (after the fact) limit for a particular measurement.*

*For a more complete discussion of the LLD, and other detection limits, see the following:
(1) HASL Procedures Manual, HASL-300 (revised annually).
(2) Currie, L. A., "Limits for Qualitative Detection and Quantitative Determination - Application to Radiochemistry" Anal. Chem. 40, 586-93 (1968).
(3) Hartwell, J. K., "Detection Limits for Radioisotopic Counting Techniques," Atlantic Richfield Hanford Company Report ARH-2537 (June 22, 1972).

TABLE 4.11-1 (Continued)

TABLE NOTATION

b. A composite sample is one in which the quantity of liquid sampled is proportional to the quantity of liquid waste discharged and in which the method of sampling employed results in a specimen which is representative of the liquids released.

c. To be representative of the quantities and concentrations of radioactive materials in liquid effluents, samples shall be collected continuously in proportion to the rate of flow of the effluent stream. Prior to analyses, all samples taken for the composite shall be thoroughly mixed in order for the composite sample to be representative of the effluent release.

d. A batch release is the discharge of liquid wastes of a discrete volume. Prior to sampling for analyses, each batch shall be isolated, and then thoroughly mixed, by a method described in the ODCM, to assure representative sampling.

e. A continuous release is the discharge of liquid wastes of a nondiscrete volume; e.g., from a volume of system that has an input flow during the continuous release.

f. The principal gamma emitters for which the LLD specification applies exclusively are the following radionuclides: Mn-54, Fe-59, Co-58, Co-60, Zn-65, Mo-99, Cs-134, Cs-137, Ce-141, and Ce-144. This list does not mean that only these nuclides are to be detected and reported. Other peaks which are measurable and identifiable, together with the above nuclides, shall also be identified and reported.

* Sampling of this flow is not required if, at least once per 31 days, condensate monitor tank bypass valve, SA 1415-2½"-200, is verified locked shut.

\# Administrative controls shall provide for composite sampling of the continuous releases per note b vice note c until January 1, 1983. Continuous proportional sampling shall be in accordance with note c from January 1, 1983 and all times subsequent as required by Table 4.11-1.

\## Administrative controls shall provide for composite sampling of the continuous releases per note b vice note c until January 1, 1984. Continuous proportional sampling shall be in accordance with note c from January 1, 1984 and all times subsequent as required by Table 4.11-1.

** Sampling of this flow is not required if at least once per 31 days blowdown bypass isolation valve (S31301MU618 for Steam Generator E088 and S31301MU619 for Steam Generator E089) is verified locked shut.

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RADIOACTIVE EFFLUENTS

DOSE

LIMITING CONDITION FOR OPERATION

3.11.1.2 The dose or dose commitment to an individual from radioactive materials in liquid effluents released, from each reactor unit, from the site (see Figure 5.1-4) shall be limited:

a. During any calendar quarter to less than or equal to 1.5 mrem to the total body and to less than or equal to 5 mrem to any organ, and

b. During any calendar year to less than or equal to 3 mrem to the total body and to less than or equal to 10 mrem to any organ.

APPLICABILITY: At all times.

ACTION:

a. With the calculated dose from the release of radioactive materials in liquid effluents exceeding any of the above limits, in lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report which identifies the cause(s) for exceeding the limit(s) and defines the corrective actions taken to reduce the releases and the proposed actions to be taken to assure that subsequent releases will be in compliance with Specification 3.11.1.2

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.1.2 Dose Calculations. Cumulative dose contributions from liquid effluents shall be determined in accordance with the ODCM at least once per 31 days.

RADIOACTIVE EFFLUENTS

LIQUID WASTE TREATMENT

LIMITING CONDITION FOR OPERATION

3.11.1.3 The liquid radwaste treatment system shall be OPERABLE. The appropriate portions of the system shall be used to reduce the radioactive materials in liquid wastes prior to their discharge when the projected doses due to the liquid effluent from the site (see Figure 5.1-4) when averaged over 31 days, would exceed 0.06 mrem to the total body or 0.2 mrem to any organ.*

APPLICABILITY: At all times.

ACTION:

a. With the liquid radwaste treatment system inoperable for more than 31 days or with radioactive liquid waste being discharged without treatment and in excess of the above limits, in lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission within 30 days pursuant to Specification 6.9.2 a Special Report which includes the following information:

   1. Identification of the inoperable equipment or subsystems and the reason for inoperability,

   2. Action(s) taken to restore the inoperable equipment to OPERABLE status, and

   3. Summary description of action(s) taken to prevent a recurrence.

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.1.3.1 Doses due to liquid releases shall be projected at least once per 31 days, in accordance with the ODCM.

4.11.1.3.2 The liquid radwaste treatment system shall be demonstrated OPERABLE by operating the liquid radwaste treatment system equipment for at least 15 minutes at least once per 92 days unless the liquid radwaste system has been utilized to process radioactive liquid effluents during the previous 92 days.

* Per reactor unit

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RADIOACTIVE EFFLUENTS

LIQUID HOLDUP TANKS

LIMITING CONDITION FOR OPERATION

3.11.1.4 The quantity of radioactive material contained in each outside temporary tank shall be limited to less than or equal to 10 curies, excluding tritium and dissolved or entrained noble gases.

APPLICABILITY: At all times.

ACTION:

a. With the quantity of radioactive material in any outside temporary tank exceeding the above limit, immediately suspend all additions of radioactive material to the tank and within 48 hours reduce the tank contents to within the limit.

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.1.4 The quantity of radioactive material contained in each outside temporary tank shall be determined to be within the above limit by analyzing a representative sample of the tank's contents at least once per 7 days when radioactive materials are being added to the tank.

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RADIOACTIVE EFFLUENTS

3/4.11.2 GASEOUS EFFLUENTS

DOSE RATE

LIMITING CONDITION FOR OPERATION

3.11.2.1 The dose rate in unrestricted areas due to radioactive materials released in gaseous effluents from the site (see Figure 5.1-3) shall be limited to the following:

a. For noble gases: Less than or equal to 500 mrem/yr to the total body and less than or equal to 3000 mrem/yr to the skin, and

b. For all radioiodines, tritium and for all radioactive materials in particulate form with half lives greater than 8 days: Less than or equal to 1500 mrem/yr to any organ.

APPLICABILITY: At all times.

ACTION:

With the dose rate(s) exceeding the above limits, immediately decrease the release rate to within the above limit(s).

SURVEILLANCE REQUIREMENTS

4.11.2.1.1 The dose rate due to noble gases in gaseous effluents shall be determined to be within the above limits in accordance with the methods and procedures of the ODCM.

4.11.2.1.2 The dose rate due to radioiodines, tritium and radioactive materials in particulate form with half lives greater than 8 days in gaseous effluents shall be determined to be within the above limits in accordance with the methods and procedures of the ODCM by obtaining representative samples and performing analyses in accordance with the sampling and analysis program specified in Table 4.11-2.

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TABLE 4.11-2

RADIOACTIVE GASEOUS WASTE SAMPLING AND ANALYSIS PROGRAM

Gaseous Release Type	Sampling Frequency	Minimum Analysis Frequency	Type of Activity Analysis	Lower Limit of Detection (LLD) (μCi/ml)[a]
A. Waste Gas Storage Tank	P Each Tank Grab Sample	P Each Tank	Principal Gamma Emitters[g]	$1x10^{-4}$
B. Containment Purge 42 inch	P Each Purge[b,c]	P Each Purge[b]	Principal Gamma Emitters[g]	$1x10^{-4}$
			H-3	$1x10^{-6}$
8 inch	M[b] Grab Sample	M[b]	Principal Gamma Emmitters[g]	$1x10^{-4}$
			H-3	$1x10^{-6}$
C. 1. Condenser Evacuation System	M[b] Grab Sample	M[b]	Principal Gamma Emitters[g]	$1x10^{-4}$
			H-3	$1x10^{-6}$
2. Plant Vent Stack	W[b,e]	W[b]	Principal Gamma Emitters[g]	$1x10^{-4}$
			H-3	$1x10^{-6}$
D. All Release Types as listed in B and C above.	Continuous[f] Sampler	W[d] Charcoal Sample	I-131	$1x10^{-12}$
			I-133	$1x10^{-10}$
	Continuous[f] Sampler	W[d] Particulate Sample	Principal Gamma Emitters[g] (I-131, Others)	$1x10^{-11}$
	Continuous[f] Sampler	M Composite Particulate Sample	Gross Alpha	$1x10^{-11}$
	Continuous[f] Sampler	Q Composite Particulate Sample	Sr-89, Sr-90	$1x10^{-11}$
	Continuous[f] Monitor	Noble Gas Monitor	Noble Gases Gross Beta or Gamma	$1x10^{-6}$

TABLE 4.11-2 (Continued)

TABLE NOTATION

a. The LLD is the smallest concentration of radioactive material in a sample that will be detected with 95% probability with 5% probability of falsely concluding that a blank observation represents a "real" signal.

For a particular measurement system (which may include radiochemical separation):

$$LLD = \frac{4.66\ s_b}{E \cdot V \cdot 2.22 \times 10^6 \cdot Y \cdot \exp(-\lambda \Delta t)}$$

Where:

LLD is the "a priori" lower limit of detection as defined above (as microcurie per unit mass or volume),

s_b is the standard deviation of the background counting rate or of the counting rate of a blank sample as appropriate (as counts per minute),

E is the counting efficiency (as counts per transformation),

V is the sample size (in units of mass or volume),

2.22×10^6 is the number of transformations per minute per microcurie,

Y is the fractional radiochemical yield (when applicable),

λ is the radioactive decay constant for the particular radionuclide, and

Δt is the elapsed time between midpoint of sample collection and time of counting (for plant effluents, not environmental samples).

The value of s_b used in the calculation of the LLD for a particular measurement system shall be based on the actual observed variance of the background counting rate or of the counting rate of the blank samples (as appropriate) rather than on an unverified theoretically predicted variance.

In calculating the LLD for a radionuclide determined by gamma ray spectrometry, the background should include the typical contributions of other radionuclides normally present in the samples. Typical values of E, V, Y and Δt should be used in the calculation.

It should be recognized that the LLD is defined as an a priori (before the fact) limit representing the capability of the measurement system and not as a posteriori (after the fact) limit for a particular measurement.*

*For a more complete discussion of the LLD, and other detection limits, see the following:
(1) HASL Procedures Manual, HASL-300 (revised annually).
(2) Currie, L. A., "Limits for Qualitative Detection and Quantitative Determination - Application to Radiochemistry" Anal. Chem. 40, 586-93 (1968).
(3) Hartwell, J. K., "Detection Limits for Radioisotopic Counting Techniques," Atlantic Richfield Hanford Company Report ARH-2537 (June 22, 1972).

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RADIOACTIVE EFFLUENTS

EXPLOSIVE GAS MIXTURE

LIMITING CONDITION FOR OPERATION

3.11.2.5 The concentration of oxygen in the waste gas holdup system shall be limited to less than or equal to 2% by volume whenever the hydrogen concentration exceeds 4% by volume.

APPLICABILITY: At all times.

ACTION:

a. With the concentration of oxygen in the waste gas holdup system greater than 2% by volume but less than or equal to 4% by volume, restore the concentration of oxygen to within the limit within 48 hours.

b. With the concentration of oxygen in the waste gas holdup system greater than 4% by volume, immediately suspend all additions of waste gases to the system and reduce the concentration of oxygen to less than 4% by volume within one hour and less than or equal to 2% by volume within 48 hours.

c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.5 The concentrations of hydrogen and oxygen in the waste gas holdup system shall be determined to be within the above limits by continuously monitoring the waste gases in the waste gas holdup system with the hydrogen and oxygen monitors required OPERABLE by Table 3.3-13 of Specification 3.3.3.9.

RADIOACTIVE EFFLUENTS

GAS STORAGE TANKS

LIMITING CONDITION FOR OPERATION

3.11.2.6 The quantity of radioactivity contained in each gas storage tank shall be limited to less than or equal to 134,000 curies noble gases (considered as Xe-133).

APPLICABILITY: At all times.

ACTION:

a. With the quantity of radioactive material in any gas storage tank exceeding the above limit, immediately suspend all additions of radioactive material to the tank and within 48 hours reduce the tank contents to within the limit.

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.6 The quantity of radioactive material contained in each gas storage tank shall be determined to be within the above limit at least once per 24 hours when radioactive materials are being added to the tank.

3/4.11.3 SOLID RADIOACTIVE WASTE

LIMITING CONDITION FOR OPERATION

3.11.3 The solid radwaste system shall be OPERABLE and used, as applicable in accordance with a PROCESS CONTROL PROGRAM, for the SOLIDIFICATION and packaging of radioactive wastes to ensure meeting the requirements of 10 CFR Part 20 and of 10 CFR Part 71 prior to shipment of radioactive wastes from the site.

APPLICABILITY: At all times.*

ACTION:

a. With the packaging requirements of 10 CFR Part 20 and/or 10 CFR Part 71 not satisfied, suspend shipments of defectively packaged solid radioactive wastes from the site.

b. With the solid radwaste system inoperable for more than 31 days, in lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission within 30 days pursuant to Specification 6.9.2 a Special Report which includes the following information:

   1. Identification of the inoperable equipment or subsystems and the reason for inoperability,

   2. Action(s) taken to restore the inoperable equipment to OPERABLE status,

   3. A description of the alternative used for SOLIDIFICATION and packaging of radioactive wastes, and

   4. Summary description of action(s) taken to prevent a recurrence.

c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.3.1 The solid radwaste system shall be demonstrated OPERABLE at least once per 92 days by:

a. Operating the solid radwaste system at least once in the previous 92 days in accordance with the PROCESS CONTROL PROGRAM, or

b. Verification of the existence of a valid contract for SOLIDIFICATION to be performed by a contractor in accordance with a PROCESS CONTROL PROGRAM.

*See Specification 6.13.1.

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SURVEILLANCE REQUIREMENTS (Continued)

4.11.3.2 THE PROCESS CONTROL PROGRAM shall be used to verify the SOLIDIFICATION of at least one representative test specimen from at least every tenth batch of each type of wet radioactive waste (e.g., filter sludges, spent resins, other than dewatered bead type, evaporator bottoms, boric acid solutions, and sodium sulfate solutions).

a. If any test specimen fails to verify SOLIDIFICATION, the SOLIDIFICATION of the batch under test shall be suspended until such time as additional test specimens can be obtained, alternative SOLIDIFICATION parameters can be determined in accordance with the PROCESS CONTROL PROGRAM, and a subsequent test verifies SOLIDIFICATION. SOLIDIFICATION of the batch may then be resumed using the alternative SOLIDIFICATION parameters determined by the PROCESS CONTROL PROGRAM.

b. If the initial test specimen from a batch of waste fails to verify SOLIDIFICATION, the PROCESS CONTROL PROGRAM shall provide for the collection and testing of representative test specimens from each consecutive batch of the same type of wet waste until at least 3 consecutive initial test specimens demonstrate SOLIDIFICATION. The PROCESS CONTROL PROGRAM shall be modified as required, as provided in Specification 6.13, to assure SOLIDIFICATION of subsequent batches of waste.

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3/4.11.4 TOTAL DOSE

LIMITING CONDITION FOR OPERATION

3.11.4 The dose or dose commitment to any member of the public, due to releases of radioactivity and radiation, from uranium fuel cycle sources shall be limited to less than or equal to 25 mrem to the total body or any organ (except the thyroid, which shall be limited to less than or equal to 75 mrem) over 12 consecutive months.

APPLICABILITY: At all times.

ACTION:

a. With the calculated doses from the release of radioactive materials in liquid or gaseous effluents exceeding twice the limits of Specification 3.11.1.2.a, 3.11.1.2.b, 3.11.2.2.a, 3.11.2.2.b, 3.11.2.3.a, or 3.11.2.3.b, in lieu of any other report required by Specification 6.9.1, prepare and submit a Special Report to the Director, Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, within 30 days, which defines the corrective action to be taken to reduce subsequent releases to prevent recurrence of exceeding the limits of Specification 3.11.4. This Special Report shall include an analysis which estimates the radiation exposure (dose) to a member of the public from uranium fuel cycle sources (including all effluent pathways and direct radiation) for a 12 consecutive month period that includes the release(s) covered by this report. If the estimated dose(s) exceeds the limits of Specification 3.11.4, and if the release condition resulting in violation of 40 CFR 190 has not already been corrected, the Special Report shall include a request for a variance in accordance with the provisions of 40 CFR 190 and including the specified information of § 190.11(b). Submittal of the report is considered a timely request, and a variance is granted until staff action on the request is complete. The variance only relates to the limits of 40 CFR 190, and does not apply in any way to the requirements for dose limitation of 10 CFR Part 20, as addressed in other sections of this technical specification.

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.4 Dose Calculations Cumulative dose contributions from liquid and gaseous effluents shall be determined in accordance with Specifications 4.11.1.2, 4.11.2.2, and 4.11.2.3, and in accordance with the ODCM.

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3/4.12 RADIOLOGICAL ENVIRONMENTAL MONITORING

3/4.12.1 MONITORING PROGRAM

LIMITING CONDITION FOR OPERATION

3.12.1 The radiological environmental monitoring program shall be conducted as specified in Table 3.12-1.

APPLICABILITY: At all times.

ACTION:

a. With the radiological environmental monitoring program not being conducted as specified in Table 3.12-1, in lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission, in the Annual Radiological Operating Report, a description of the reasons for not conducting the program as required and the plans for preventing a recurrence.

b. With the level of radioactivity in an environmental sampling medium exceeding the reporting levels of Table 3.12-2 when averaged over any calendar quarter, in lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission within 30 days from the end of the affected calendar quarter a Report pursuant to Specification 6.9.1.13. When more than one of the radionuclides in Table 3.12-2 are detected in the sampling medium, this report shall be submitted if:

$$\frac{\text{concentration (1)}}{\text{limit level (1)}} + \frac{\text{concentration (2)}}{\text{limit level (2)}} + \ldots \geq 1.0$$

When radionuclides other than those in Table 3.12-2 are detected and are the result of plant effluents, this report shall be submitted if the potential annual dose to an individual is equal to or greater than the calendar year limits of Specifications 3.11.1.2, 3.11.2.2 and 3.11.2.3. This report is not required if the measured level of radioactivity was not the result of plant effluents; however, in such an event, the condition shall be reported and described in the Annual Radiological Environmental Operating Report.

c. With fresh leafy vegetable samples or fleshy vegetable samples unavailable from one or more of the sample locations required by Table 3.12-1, in lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report which identifies the cause of the unavailability of samples and identifies locations for obtaining replacement samples. The locations from which samples were unavailable may then be deleted from those required by Table 3.12-1, provided the locations from which the replacement samples were obtained are added to the environmental monitoring program as replacement locations.

d. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.12.1 The radiological environmental monitoring samples shall be collected pursuant to Table 3.12-1 from the locations given in the table and figure in the ODCM and shall be analyzed pursuant to the requirements of Tables 3.12-1 and 4.12-1.

TABLE 3.12-1

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

Exposure Pathway and/or Sample	Number of Samples and Sample Locations[a]	Sampling and Collection Frequency[a]	Type and Frequency of Analyses
1. AIRBORNE Radioiodine and Particulates	Samples from at least 5 locations 3 samples from offsite locations (in different sectors) of the highest calculated annual average groundlevel D/Q. 1 sample from the vicinity of a community having the highest calculated annual average groundlevel D/Q. 1 sample from a control location 15-30 km (10-20 miles) distant and in the least prevalent wind direction[c]	Continuous operation of sampler with sample collection as required by dust loading but at least once per 7 days.[d]	Radioiodine cartridge. Analyze at least once per 7 days for I-131. Particulate sampler. Analyze for gross beta radioactivity $\geq$ 24 hours following filter change. Perform gamma isotopic[b] analysis on each sample when gross beta activity is > 10 times the yearly mean of control samples. Perform gamma isotopic analysis on composite (by location) sample at least once per 92 days.
2. DIRECT RADIATION[e]	At least 30 locations including an inner ring of stations in the general area of the site boundary and an outer ring approximately in the 4 to 5 mile range from the site with a station in each sector of each ring. The balance of the stations are in special interest areas such as population centers, nearby residences, schools, and in 2 or 3 areas to serve as control stations.	At least once per 92 days.	Gamma dose. At least once per 92 days.

TABLE 3.12-1 (Continued)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

Exposure Pathway and/or Sample	Number of Samples and Sample Locations[a]	Sampling and Collection Frequency[a]	Type and Frequency of Analyses
3. WATERBORNE			
a. Ocean	4 Locations	At least once per month and composited[f] quarterly	Gamma isotopic analysis of each monthly sample. Tritium analysis of composite sample at least once per 92 days.
b. Drinking	2 Locations	Monthly at each location.	Gamma isotopic and tritium analyses of each sample.
c. Sediment from Shoreline	4 Locations	At least once per 184 days.	Gamma isotopic analysis of each sample.
d. Ocean Bottom Sediments	5 Locations	At least once per 184 days.	Gamma isotopic analysis of each sample.

TABLE 3.12-1 (Continued)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

Exposure Pathway and/or Sample	Number of Samples and Sample Locations[a]	Sampling and Collection Frequency[a]	Type and Frequency of Analyses
4. INGESTION			
a. Nonmigratory Marine Animals	3 Locations	One sample in season, or at least once per 184 days if not seasonal. One sample of each of the following species: 1. Fish-2 adult species such as perch or sheepshead. 2. Crustaceae-such as crab or lobster. 3. Mollusks-such as limpets or seahares.	Gamma isotopic analysis on edible portions.
b. Local Crops	2 Locations	Representative vegetables, normally 1 leafy and 1 fleshy collected at harvest time. At least 2 vegetables collected semiannually from each location.	Gamma isotopic analysis on edible portions semiannually and I-131 analysis for leafy crops.

TABLE 3.12-1 (Continued)

TABLE NOTATION

a. Sample locations are indicated in the ODCM

b. Gamma isotopic analysis means the identification and quantification of gamma-emitting radionuclides that may be attributable to the effluents from the facility.

c. The purpose of this sample is to obtain background information. If it is not practical to establish control locations in accordance with the distance and wind direction criteria, other sites which provide valid background data may be substituted.

d. Canisters for the collection of radioiodine in air are subject to channeling. These devices should be carefully checked before operation in the field or several should be mounted in series to prevent loss of iodine.

e. Regulatory Guide 4.13 provides minimum acceptable performance criteria for thermoluminescence dosimetry (TLD) systems used for environmental monitoring. One or more instruments, such as a pressurized ion chamber, for measuring and recording dose rate continuously may be used in place of, or in addition to, integrating dosimeters. For the purposed of this table, a thermoluminescent dosimeter may be considered to be one phosphor and two or more phosphors in a packet may be considered as two or more dosimeters. Film badges should not be used for measuring direct radiation.

f. Composite samples should be collected with equipment (or equivalent) which is capable of collecting an aliquot at time intervals which are very short (e.g., hourly) relative to the compositing period (e.g., monthly).

TABLE 3.12-2

REPORTING LEVELS FOR RADIOACTIVITY CONCENTRATIONS IN ENVIRONMENTAL SAMPLES

	Reporting Levels			
Analysis	Water (pCi/l)	Airborne Particulate or Gases (pCi/m^3)	Marine Animals (pCi/Kg, wet)	Local Crops (pCi/Kg, wet)
H-3	2×10^4(a)			
Mn-54	1×10^3		3×10^4	
Fe-59	4×10^2		1×10^4	
Co-58	1×10^3		3×10^4	
Co-60	3×10^2		1×10^4	
Zn-65	3×10^2		2×10^4	
Zr-Nb-95	4×10^2			
I-131	2	0.9		1×10^2
Cs-134	30	10	1×10^3	1×10^3
Cs-137	50	20	2×10^3	2×10^3
Ba-La-140	2×10^2			

(a) For drinking water samples. This is 40 CFR Part 141 value.

TABLE 4.12-1

MAXIMUM VALUES FOR THE LOWER LIMITS OF DETECTION (LLD)[a,c]

Analysis	Water (pCi/l)	Airborne Particulate or Gas (pCi/m^3)	Marine Animals (pCi/kg, wet)	Local Crops (pCi/kg, wet)	Sediment (pCi/kg, dry)
gross beta	4	1×10^{-2}			
H-3	2000				
Mn-54	15		130		
Fe-59	30		260		
Co-58, 60	15		130		
Zn-65	30		260		
Zr-95	30				
Nb-95	15				
I-131	1[b]	7×10^{-2}		60	
Cs-134	15	5×10^{-2}	130	60	150
Cs-137	18	6×10^{-2}	150	80	180
Ba-140	60				
La-140	15				

TABLE 4.12-1 (Continued)

TABLE NOTATION

a. The LLD is the smallest concentration of radioactive material in a sample that will be detected with 95% probability with 5% probability of falsely concluding that a blank observation represents a "real" signal.

For a particular measurement system (which may include radiochemical separation):

$$LLD = \frac{4.66\ s_b}{E \cdot V \cdot 2.22 \cdot Y \cdot \exp(-\lambda\Delta t)}$$

Where:

LLD is the "a priori" lower limit of detection as defined above (as picocurie per unit mass or volume),

s_b is the standard deviation of the background counting rate or of the counting rate of a blank sample as appropriate (as counts per minute),

E is the counting efficiency (as counts per transformation),

V is the sample size (in units of mass or volume),

2.22 is the number of transformation per minute per picocurie,

Y is the fractional radiochemical yield (when applicable),

λ is the radioactive decay constant for the particular radionuclide, and

Δt is the elapsed time between sample collection (or end of the sample collection period) and time of counting (for environmental samples, not plant effluent samples).

The value of s_b used in the calculation of the LLD for a detection system shall be based on the actual observed variance of the background counting rate or of the counting rate of the blank samples (as appropriate) rather than on an unverified theoretically predicted variance. In calculating the LLD for a radionuclide determined by gamma-ray spectrometry, the background shall include the typical contributions of other radionuclides normally present in the samples (e.g., potassium-40 in milk samples). Typical values of E, V, Y and Δt shall be used in the calculations.

In calculating the LLD for a radionuclide determined by gamma-ray spectrometry, the background should include the typical contributions of other radionuclides normally present in the samples (e.g., potassium-40 in milk samples). Typical values of E, V, Y and Δt should be used in the calculation.

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TABLE 4.12-1 (Continued)

TABLE NOTATION

It should be recognized that the LLD is defined as an a priori (before the fact) limit representing the capability of a measurement system and not as a posteriori (after the fact) limit for a particular measurement.*

b. LLD for drinking water.

c. Other peaks which are measurable and identifiable, together with the radionuclides in Table 4.12-1, shall be identified and reported.

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*For a more complete discussion of the LLD, and other detection limits, see the following:

(1) HASL Procedures Manual, HASL-300 (revised annually).
(2) Currie, L. A., "Limits for Qualitative Detection and Quantitative Determination - Application to Radiochemistry" Anal. Chem. 40, 586-93 (1968).
(3) Hartwell, J. K., "Detection Limits for Radioisotopic Counting Techniques," Atlantic Richfield Hanford Company Report ARH-2537 (June 22, 1972).

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3/4.12.2 LAND USE CENSUS

LIMITING CONDITION FOR OPERATION

3.12.2 A land use census shall be conducted and shall identify the location of the nearest milk animal, the nearest residence and the nearest garden* of greater than 500 square feet producing fresh leafy vegetables in each of the 16 meteorological sectors within a distance of five miles. For elevated releases as defined in Regulatory Guide 1.111, Revision 1, July 1977, the land use census shall also identify the locations of all milk animals and all gardens of greater than 500 square feet producing fresh leafy vegetables in each of the 16 meteorological sectors within a distance of three miles.

APPLICABILITY: At all times.

ACTION:

a. With a land use census identifying a location(s) which yields a calculated dose or dose commitment greater than the values currently being calculated in Specification 4.11.2.3, in lieu of any other report required by Specification 6.9.1., prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report which identifies the new location(s).

b. With a land use census identifying a location(s) which yields a calculated dose or dose commitment via the same exposure pathway 20 percent greater than at a location from which samples are currently being obtained in accordance with Specification 3.12.1, in lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report which identifies the new location. The new location shall be added to the radiological environmental monitoring program within 30 days. The sampling location, excluding the control station location, having the lowest calculated dose or dose commitment via the same exposure pathway may be deleted from this monitoring program after October 31 of the year in which this land use census was conducted.

c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.12.2 The land use census shall be conducted at least once per 12 months between the dates of June 1 and October 1 using that information which will provide the best results, such as by a door-to-door survey, aerial survey, or by consulting local agriculture authorities.

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* Broad leaf vegetation sampling may be performed at the site boundary in the direction sector with the highest D/Q in lieu of the garden census.

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3/4.12.3 INTERLABORATORY COMPARISON PROGRAM

LIMITING CONDITION FOR OPERATION

3.12.3 Analyses shall be performed on radioactive materials supplied as part of an Interlaboratory Comparison Program which has been approved by the Commission.

APPLICABILITY: At all times.

ACTION:

a. With analyses not being performed as required above, report the corrective actions taken to prevent a recurrence to the Commission in the Annual Radiological Environmental Operating Report.

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.12.3 A summary of the results obtained as part of the above required Interlaboratory Comparison Program and in accordance with the ODCM shall be included in the Annual Radiological Environmental Operating Report.

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Attachment "C"

The following definitions are added to Section 1.0:

MEMBER(S) OF THE PUBLIC

MEMBER(S) OF THE PUBLIC shall include all individuals who by virtue of their occupational status have no formal association with the plant. This category shall include nonemployees of the licensee who are permitted to use portions of the site for recreational, occupational, or other purposes not associated with plant functions. This category shall not include nonemployees such as vending machine servicemen or postmen who, as part of their formal job function, occasionally enter an area that is controlled by the licensee for purposes of protection of individuals from exposure to radiation and radioactive materials.

SITE BOUNDARY

The SITE BOUNDARY shall be that line beyond which the land is not owned, leased, or otherwise controlled by the licensee.

UNRESTRICTED AREA

An UNRESTRICTED AREA shall be any area at or beyond the site boundary, access to which is not controlled by the licensee for purposes of protection of individuals from exposure to radiation and radioactive materials, or any area within the site boundary used for residential quarters or industrial, commercial, institutional and/or recreational purposes.

3/4.11 RADIOACTIVE EFFLUENTS

3/4.11.1 LIQUID EFFLUENTS

CONCENTRATION

LIMITING CONDITION FOR OPERATION

3.11.1.1 The concentration of radioactive material released from the site (see Figure 5.1-4) shall be limited to the concentrations specified in 10 CFR Part 20, Appendix B, Table II, Column 2 for radionuclides other than dissolved or entrained noble gases. For dissolved or entrained noble gases, the concentration shall be limited to 2×10^{-4} microcuries/ml total activity.

APPLICABILITY: At all times.

ACTION:

With the concentration of radioactive material released from the site exceeding the above limits, immediately restore the concentration to within the above limits.

SURVEILLANCE REQUIREMENTS

4.11.1.1.1 Radioactive liquid wastes shall be sampled and analyzed according to the sampling and analysis program of Table 4.11-1.

4.11.1.1.2 The results of the radioactivity analyses shall be used in accordance with the methodology and parameters in the ODCM to assure that the concentrations at the point of release are maintained within the limits of Specification 3.11.1.1.

TABLE 4.11-1

RADIOACTIVE LIQUID WASTE SAMPLING AND ANALYSIS PROGRAM

Liquid Release Type	Sampling Frequency	Minimum Analysis Frequency	Type of Activity Analysis	Lower Limit of Detection (LLD) (μCi/ml)[a]
A. Batch Waste Release Tanks[d]	P Each Batch	P Each Batch	Principal Gamma Emitters[f]	5×10^{-7}
			I-131	1×10^{-6}
1. Primary Plant Makeup Storage Tanks 2. Radwaste Primary Tanks	P One Batch/M	M	Dissolved and Entrained Gases (Gamma emitters)	1×10^{-5}
3. Radwaste Secondary Tanks	P Each Batch	M Composite[b]	H-3	1×10^{-5}
4. Miscellaneous Waste Condensate Monitor Tanks			Gross Alpha	1×10^{-7}
5. Neutralization Sump	P Each Batch	Q Composite[b]	Sr-89, Sr-90	5×10^{-8}
			Fe-55	1×10^{-6}
B. Continuous Releases[e]	D Grab Sample	W Composite[c]	Principal Gamma Emitters[f]	5×10^{-7}
1. Steam Generator Blowdown			I-131	1×10^{-6}
2. Turbine Building Sump	M Grab Sample	M	Dissolved and Entrained Gases (Gamma Emitters)	1×10^{-5}
3. Miscellaneous Waste Evaporator Condensate*	D Grab Sample	M Composite[c]	H-3	1×10^{-5}
			Gross Alpha	1×10^{-7}
4. Salt Water Discharge From Component Cooling Heat Exchanger	D Grab Sample	Q Composite[c]	Sr-89, Sr-90	5×10^{-8}
Steam Generator Blowdown Bypass **			Fe-55	1x10-6

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TABLE 4.11-1 (Continued)

TABLE NOTATION

a. The LLD is defined, for the purposes of these specifications, as the smallest concentration of radioactive material in a sample that will yield a net count, above system background, that will be detected with 95% probability and only 5% probability of falsely concluding that a blank observation represents a "real" signal.

For a particular measurement system (which may include radiochemical separation):

$$LLD = \frac{4.66\ s_b}{E \cdot V \cdot 2.22 \times 10^6\ Y \cdot \exp(-\lambda \Delta t)}$$

Where:

LLD is the "a priori" lower limit of detection as defined above (as micocurie per unit mass or volume),

s_b is the standard deviation of the background counting rate or of the counting rate of a blank sample as appropriate (as counts per minute),

E is the counting efficiency (as counts per transformation),

V is the sample size (in units of mass or volume),

2.22×10^6 is the number of transformations per minute per micocurie,

Y is the fractional radiochemical yield (when applicable),

λ is the radioactive decay constant for the particular radionuclide, and

Δt is the elapsed time between midpoint of sample collection and time of counting.

Typical values of E, V, Y and Δt should be used in the calculation.

It should be recognized that the LLD is defined as an a priori (before the fact) limit representing the capability of the measurement system and not as an a posteriori (after the fact) limit for a particular measurement.

TABLE 4.11-1 (Continued)

TABLE NOTATION

b. A composite sample is one in which the quantity of liquid sampled is proportional to the quantity of liquid waste discharged and in which the method of sampling employed results in a specimen which is representative of the liquids released.

c. To be representative of the quantities and concentrations of radioactive materials in liquid effluents, samples shall be collected continuously in proportion to the rate of flow of the effluent stream. Prior to analyses, all samples taken for the composite shall be thoroughly mixed in order for the composite sample to be representative of the effluent release.

d. A batch release is the discharge of liquid wastes of a discrete volume. Prior to sampling for analyses, each batch shall be isolated, and then thoroughly mixed to assure representative sampling.

e. A continuous release is the discharge of liquid wastes of a nondiscrete volume; e.g., from a volume of system that has an input flow during the continuous release.

f. The principal gamma emitters for which the LLD specification applies exclusively are the following radionuclides: Mn-54, Fe-59, Co-58, Co-60, Zn-65, Mo-99, Cs-134, Cs-137, Ce-141 and Ce-144. This list does not mean that only these nuclides are to be detected and reported. Other peaks which are measurable and identifiable, together with the above nuclides, shall also be identified and reported in the Semiannual Effluent Release Report Pursuant to Specification 6.9.1.8.

* Sampling of this flow is not required if, at least once per 31 days, condensate monitor tank bypass valve, SA 1415-2 1/2"-200, is verified locked shut.

** Sampling of this flow is not required if at least once per 31 days, blowdown bypass isolation valve (S21301MU618 for Steam Generator E088 and S21301MU619 for Steam Generator E089) is verified locked shut.

RADIOACTIVE EFFLUENTS

DOSE

LIMITING CONDITION FOR OPERATION

3.11.1.2 The dose or dose commitment to a MEMBER OF THE PUBLIC from radioactive materials in liquid effluents released, from Units 2&3 combined (see Figure 5.1-4) shall be limited:

a. During any calendar quarter to less than or equal to 3.0 mrem to the total body and to less than or equal to 10 mrem to any organ, and

b. During any calendar year to less than or equal to 6 mrem to the total body and to less than or equal to 20 mrem to any organ.

APPLICABILITY: At all times.

ACTION

a. With the calculated dose from the release of radioactive materials in liquid effluents exceeding any of the above limits, in lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report which identifies the cause(s) for exceeding the limit(s) and defines the corrective actions taken to reduce the releases and proposed actions to be taken.

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.1.2 Dose Calculations. Cumulative dose contributions from liquid effluents for the current calendar quarter and the current calendar year shall be determined in accordance with the ODCM at least once per 31 days.

RADIOACTIVE EFFLUENTS

LIQUID WASTE TREATMENT

LIMITING CONDITION FOR OPERATION

3.11.1.3 The liquid radwaste treatment system shall be OPERABLE, and the appropriate portions of the system shall be used to reduce the radioactive materials in liquid wastes prior to their discharge when the projected doses due to the liquid effluent from Units 2&3 combined (see Figure 5.1-4) when averaged over 31 days, would exceed 0.12 mrem to the total body or 0.4 mrem to any organ.

APPLICABILITY: At all times.

ACTION:

a. With radioactive liquid waste being discharged without treatment and in excess of the above limits and any portion of the liquid radwaste treatment system not in operation, in lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission within 30 days pursuant to Specification 6.9.2 a Special Report which includes the following information:

   1. Explanation of why liquid radwaste was being discharged without treatment, identification of the inoperable equipment or subsystems and the reason for inoperability,

   2. Action(s) taken to restore the inoperable equipment to OPERABLE status, and

   3. Summary description of action(s) taken to prevent a recurrence.

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.1.3.1 Doses due to liquid releases shall be projected at least once per 31 days, in accordance with the ODCM.

RADIOACTIVE EFFLUENTS

LIQUID HOLDUP TANKS

LIMITING CONDITION FOR OPERATION

3.11.1.4 The quantity of radioactive material contained in each outside temporary tank* shall be limited to less than or equal to 10 curies, excluding tritium and dissolved or entrained noble gases.

APPLICABILITY: At all times.

ACTION:

a. With the quantity of radioactive material in any outside temporary tank exceeding the above limit, immediately suspend all additions of radioactive material to the tank and within 48 hours reduce the tank contents to within the limit.

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.1.4 The quantity of radioactive material contained in each outside temporary tank shall be determined to be within the above limit by analyzing a representative sample of the tank's contents at least once per 7 days when radioactive materials are being added to the tank.

*Tanks included in this Specification are those outdoor tanks that are not surrounded by liners, dikes or walls capable of holding the tank contents and that do not have tank overflow and surrounding area drains connected to the liquid radwaste treatment system.

RADIOACTIVE EFFLUENTS

3/4.11.2 GASEOUS EFFLUENTS

DOSE RATE

LIMITING CONDITION FOR OPERATION

3.11.2.1 The dose rate due to radioactive materials released in gaseous effluents from the site to areas at and beyond the SITE BOUNDARY (see Figure 5.1-3) shall be limited to the following:

a. For noble gases: Less than or equal to 500 mrem/yr to the total body and less than or equal to 3000 mrem/yr to the skin, and

b. For iodine - 131, tritium and for all radioactive materials in particulate form with half lives greater than 8 days: Less than or equal to 1500 mrem/yr to any organ.

APPLICABILITY: At all times.

ACTION:

With the dose rate(s) exceeding the above limits, immediately restore the release rate to within the above limit(s).

SURVEILLANCE REQUIREMENTS

4.11.2.1.1 The dose rate due to noble gases in gaseous effluents shall be determined to be within the above limits in accordance with the methods and procedures of the ODCM.

4.11.2.1.2 The dose rate due to iodine - 131, tritium and radioactive materials in particulate form with half lives greater than 8 days in gaseous effluents shall be determined to be within the above limits in accordance with the methods and procedures of the ODCM by obtaining representative samples and performing analyses in accordance with the sampling and anlysis program specificed in Table 4.11-2.

RADIOACTIVE GASEOUS WASTE SAMPLING AND ANALYSIS PROGRAM

Gaseous Release Type	Sampling Frequency	Minimum Analysis Frequency	Type of Activity Analysis	Lower Limit of Detection (LLD) (μCi/ml)[a]
A. Waste Gas Storage Tank	P Each Tank Grab Sample	P Each Tank	Principal Gamma Emitters[g]	$1x10^{-4}$
B. Containment Purge 42 inch	P Each Purge[b,c]	P Each Purge[b]	Principal Gamma Emitters[g]	$1x10^{-4}$
			H-3	$1x10^{-6}$
8 inch	M[b] Grab Sample	M[b]	Principal Gamma Emmitters[g]	$1x10^{-4}$
			H-3	$1x10^{-6}$
C. 1. Condenser Evacuation System	M[b] Grab Sample	M[b]	Principal Gamma Emitters[g]	$1x10^{-4}$
			H-3	$1x10^{-6}$
2. Plant Vent Stack	W[b,e]	W[b]		
D. All Release Types as listed in B and C above.	Continuous[f] Sampler	W[d] Charcoal Sample	I-131	$1x10^{-12}$
	Continuous[f] Sampler	W[d] Particulate Sample	Principal Gamma Emitters[g] (I-131, Others)	$1x10^{-11}$
	Continuous[f] Sampler	M Composite Particulate Sample	Gross Alpha	$1x10^{-11}$
	Continuous[f] Sampler	Q Composite Particulate Sample	Sr-89, Sr-90	$1x10^{-11}$
	Continuous[f] Monitor	Noble Gas Monitor	Noble Gases Gross Beta or Gamma	$1x10^{-6}$

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TABLE 4.11-2 (Continued)

TABLE NOTATION

a. The LLD is defined, for purposes of these Specifications, as the smallest concentration of radioactive material in a sample that will yield a net count, above system background that will be detected with a 95% probability with only 5% probability of falsely concluding that a blank observation represents a "real" signal.

For a particular measurement system (which may include radiochemical separation):

$$LLD = \frac{4.66 s_b}{E \cdot V \cdot 2.22 \times 10^6 \cdot Y \cdot \exp(-\lambda \Delta t)}$$

Where:

LLD is the "a priori" lower limit of detection as defined above (as microcurie per unit mass or volume),

s_b is the standard deviation of the background counting rate or of the counting rate of a blank sample as appropriate (as counts per minute),

E is the counting efficiency (as counts per transformation),

V is the sample size (in units of mass or volume),

2.22×10^6 is the number of transformations per minute per microcurie,

Y is the fractional radiochemical yield (when applicable),

λ is the radioactive decay constant for the particular radionuclide, and

Δt is the elapsed time between midpoint of sample collection and time of counting (for plant effluents, not environmental samples).

Typical values of E, V, Y and Δt should be used in the calculation.

It should be recognized that the LLD is defined as an a priori (before the fact) limit representing the capability of the measurement system and not as an a posteriori (after the fact) limit for a particular measurement.

TABLE 4.11-2 (Continued)

TABLE NOTATION

b. Analyses shall also be performed following shutdown, startup, or a THERMAL POWER change exceeding 15 percent of the RATED THERMAL POWER within a one hour period whenever primary coolant activity is equal to or greater than 1.0 microcurie/gram DOSE EQUIVALENT I-131.

c. Tritium grab samples shall be taken at least once per 24 hours when the refueling canal is flooded.

d. Samples shall be changed at least once per 7 days and analyses shall be completed within 48 hours after changing (or after removal from sampler). Sampling shall also be performed at least once per 24 hours for at least 7 days following each shutdown, startup or THERMAL POWER change exceeding 15 percent of RATED THERMAL POWER in one hour and analyses shall be completed within 48 hours of changing. When samples collected for 24 hours are analyzed, the corresponding LLD's may be increased by a factor of 10. The requirement for sampling once per 24 hours for at least 7 days need not be performed if (1) analysis shows that the DOSE EQUIVALENT I-131 concentration in the primary coolant is less than 1.0 microcurie/gram.

e. Tritium grab samples shall be taken at least once per 7 days from the ventilation exhaust from the spent fuel pool area, whenever spent fuel is in the spent fuel pool.

f. The ratio of the sample flow rate to the sampled stream flow rate shall be known for the time period covered by each dose or dose rate calculation made in accordance with Specifications 3.11.2.1, 3.11.2.2 and 3.11.2.3.

g. The principal gamma emitters for which the LLD specification applies exclusively are the following radionuclides: Kr-87, Kr-88, Xe-133, Xe-133m, Xe-135 and Xe-138 for gaseous emissions and Mn-54, Fe-59, Co-58, Co-60, Zn-65, Mo-99, Cs-134, Cs-137, Ce-141 and Ce-144 for particulate emissions. This list does not mean that only these nuclides are to be detected and reported. Other peaks which are measurable and identifiable, together with the above nuclides, shall also be identified and reported in the "Semiannual Effluent Release Report" pursuant to Specification 6.9.1.8.

RADIOACTIVE EFFLUENTS

DOSE - NOBLE GASES

LIMITING CONDITION FOR OPERATION

3.11.2.2 The air dose due to noble gases released in gaseous effluents, from Units 2 and 3 combined to areas at and beyond the SITE BOUNDARY (see Figure 5.1-3) shall be limited to the following:

a. During any calendar quarter: Less than or equal to 10 mrad for gamma radiation and less than or equal to 20 mrad for beta radiation and,

b. During any calendar year: Less than or equal to 20 mrad for gamma radiation and less than or equal to 40 mrad for beta radiation.

APPLICABILITY: At all times.

ACTION:

a. With the calculated air dose from radioactive noble gases in gaseous effluents exceeding any of the above limits, in lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report which identifies the cause(s) for exceeding the limit(s) and defines the corrective actions taken to reduce releases and the proposed corrective actions to be taken.

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.2 Dose Calculations Cumulative dose contributions for the current calendar quarter and current calendar year for noble gases shall be determined in accordance with the ODCM at least once per 31 days.

RADIOACTIVE EFFLUENTS

DOSE - IODINE - 131, TRITIUM AND RADIONUCLIDES IN PARTICULATE FORM

LIMITING CONDITION FOR OPERATION

3.11.2.3 The dose to a MEMBER OF THE PUBLIC from tritium, iodine - 131 and radioactive materials in particulate form with half-lives greater than 8 days in gaseous effluents released, from Units 2&3 combined to areas at and beyond the SITE BOUNDARY (see Figure 5.1-3) shall be limited to the following:

A. During any calendary quarter: Less than or equal to 15 mrem to any organ and,

B. During any calendar year: Less than or equal to 30 mrem to any organ.

APPLICABILITY: At all times.

ACTION:

A. With the calculated dose from the release of tritium, iodine - 131, and radioactive materials in particulate form, with half lives greater than 8 days, in gaseous effluents exceeding any of the above limits, in lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report which identifies the cause(s) for exceeding the limit and defines the corrective actions taken to reduce releases and proposed actions to be taken.

B. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.3 Dose Calculations Cumulative dose contributions for the current calendar quarter and current calendar year for iodine-131, tritium, and radionuclides in particulate form with half lives greater than 8 days shall be determined in accordance with the methodology and parameters in the ODCM at least once per 31 days.

RADIOACTIVE EFFLUENTS

GASEOUS RADWASTE TREATMENT

LIMITING CONDITION FOR OPERATION

3.11.2.4 The GASEOUS RADWASTE TREATMENT SYSTEM and the VENTILATION EXHAUST TREATMENT SYSTEM shall be OPERABLE and appropriate portions of these systems shall be used to reduce releases of radioactivity when the projected doses in 31 days due to gaseous effluent releases from Units 2 and 3 combined to areas at and beyond the SITE BOUNDARY (see Figure 5.1-3) would exceed either:

a. 0.4 mrad to air from gamma radiation, or

b. 0.8 mrad to air from beta radiation, or

c. 0.6 mrem to any organ of a MEMBER OF THE PUBLIC.

APPLICABILITY: At all times.

ACTION:

a. With gaseous waste being discharged without treatment and in excess of the above limits, in lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report which includes the following information:

   1. Explanation of why gaseous radwaste was being discharged without treatment, identification of the inoperable equipment or subsystems and the reason for inoperability,

   2. Action(s) taken to restore the inoperable equipment to OPERABLE status, and

   3. Summary description of action(s) taken to prevent a recurrence.

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.4.1 Doses due to gaseous releases from the site shall be projected at least once per 31 days, in accordance with the methodology and parameters in the ODCM.

EXPLOSIVE GAS MIXTURE

LIMITING CONDITION FOR OPERATION

3.11.2.5 The concentration of oxygen in the waste gas holdup system shall be limited to less than or equal to 2% by volume whenever the hydrogen concentration exceeds 4% by volume.

APPLICABILITY: At all times.

ACTION:

a. With the concentration of oxygen in the waste gas holdup system greater than 2% by volume but less than or equal to 4% by volume, restore the concentration of oxygen to within the limit within 48 hours.

b. With the concentration of oxygen in the waste gas holdup system greater than 4% by volume, immediately suspend all additions of waste gases to the system and reduce the concentration of oxygen to less than 4% by volume within one hour and less than or equal to 2% by volume within 48 hours.

c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.5 The concentrations of hydrogen and oxygen in the waste gas holdup system shall be determined to be within the above limits by continuously monitoring the waste gases in the waste gas holdup system with the hydrogen and oxygen monitors required OPERABLE by Table 3.3-13 of Specification 3.3.3.9.

RADIOACTIVE EFFLUENTS

GAS STORAGE TANKS

LIMITING CONDITION FOR OPERATION

3.11.2.6 The quantity of radioactivity contained in each gas storage tank shall be limited to less than or equal to 134,000 curies noble gases (considered as Xe-133).

APPLICABILITY: At all times.

ACTION:

a. With the quantity of radioactive material in any gas storage tank exceeding the above limit, immediately suspend all additions of radioactive material to the tank and within 48 hours reduce the tank contents to within the limit.

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.6 The quantity of radioactive material contained in each gas storage tank shall be determined to be within the above limit at least once per 24 hours when radioactive materials are being added to the tank.

RADIOACTIVE EFFLUENTS

3/4.11.3 SOLID RADIOACTIVE WASTE

LIMITING CONDITION FOR OPERATION

3.11.3 Radioactive wastes shall be SOLIDIFIED or dewatered in accordance with the PROCESS CONTROL PROGRAM to meet shipping and transportation requirements during transit, and disposal site requirements when received at the disposal site.

APPLICABILITY: At all times.*

ACTION:

a. With SOLIDIFICATION or dewatering not meeting disposal site and shipping and transportation requirements, suspend shipment of the inadequately processed wastes and correct the PROCESS CONTROL PROGRAM, the procedures and/or the solid waste system as necessary to prevent recurrence.

b. With SOLIDIFICATION or dewatering not performed in accordance with the PROCESS CONTROL PROGRAM, (1) test the improperly processed waste in each container to ensure that it meets burial ground and shipping requirements, and (2) take appropriate administrative action to prevent recurrence.

c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.3 SOLIDIFICATION of at least one representative test specimen from at least every tenth batch of each type of wet radioactive wastes (e.g., filter sludges, spent resins, evaporator bottoms, boric acid solutions and sodium sulfate solutions) shall be verified in accordance with the PROCESS CONTROL PROGRAM.

a. If any test specimen fails to verify SOLIDIFICATION, the SOLIDIFICATION of the batch under test shall be suspended until such time as additional test specimens can be obtained, alternative SOLIDIFICTION parameters can be determined in accordance with the PROCESS CONTROL PROGRAM, and a subsequent test verifies SOLIDIFICATION. SOLIDIFICATION of the batch may then be resumed using the alternative SOLIDIFICATION parameters determined by the PROCESS CONTROL PROGRAM.

b. If the initial test specimen from a batch of waste fails to verify SOLIDIFICATION, the PROCESS CONTROL PROGRAM shall provide for the collection and testing of representative test specimens from each consecutive batch of the same type of wet waste until at least 3 consecutive initial test specimens demonstrate SOLIDIFICATION. The PROCESS CONTROL PROGRAM shall be modified as required, as provided in Specification 6.13, to assure SOLIDIFICATION of subsequent batches of waste.

*See Specification 6.13.1.

4.11.3.2 Deleted

3/4.11.4 TOTAL DOSE

LIMITING CONDITION FOR OPERATION

3.11.4 The annual (calendar year) dose or dose commitment to any MEMBER OF THE PUBLIC due to releases of radioactivity and to radiation from uranium fuel cycle sources shall be limited to less than or equal to 25 mrems to the total body or any organ, except the thyroid, which shall be limited to less than or equal to 75 mrems.

APPLICABILITY: At all times.

ACTION:

a. With the calculated doses from the release of radioactive materials in liquid or gaseous effluents exceeding twice the limits of Specification 3.11.1.2.a, 3.11.1.2.b, 3.11.2.2.a, 3.11.2.2.b, 3.11.2.3.a, or 3.11.2.3.b, calculations should be made including direct radiation contributions from the reactor units and from outside storage tanks to determine whether the above limits of Specification 3.11.4 have been exceeded. If such is the case, in lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report that defines the corrective action to be taken to reduce subsequent releases to prevent recurrence of exceeding the above limits and includes the schedule for achieving conformance with the above limits. This Special Report, as defined in 10 CFR Part 20.405c, shall include an analysis that estimates the radiation exposure (dose) to a MEMBER OF THE PUBLIC from uranium fuel cycle sources, including all effluent pathways and direct radiation, for the calendar year that includes the release(s) covered by this report. It shall also describe levels of radiation and concentrations of radioactive material involved, and the cause of the exposure levels or concentrations. If the estimated dose(s) exceeds the above limits, and if the release condition resulting in violation of 40 CFR Part 190 has not already been corrected, the Special Report shall include a request for a variance in accordance with the provisions of 40 CFR Part 190. Submittal of the report is considered a timely request, and a variance is granted until staff action on the request is complete.

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.4.1 Cumulative dose contributions from liquid and gaseous effluents shall be determined in accordance with Specifications 4.11.1.2, 4.11.2.2, and 4.11.2.3, and in accordance with the methodology and parameters in the ODCM.

3/4.12 RADIOLOGICAL ENVIRONMENTAL MONITORING

3/4.12.1 MONITORING PROGRAM

LIMITING CONDITION FOR OPERATION

3.12.1 The radiological environmental monitoring program shall be conducted as specified in Table 3.12-1.

APPLICABILITY: At all times.

ACTION:

a. With the radiological environmental monitoring program not being conducted as specified in Table 3.12-1, in lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission, in the Annual Radiological Environmental Operating Report required by Specification 6.9.1.6, a description of the reasons for not conducting the program as required and the plans for preventing a recurrence.

b. With the level of radioactivity as the result of plant effluents in an environmental sampling medium at a specified location exceeding the reporting levels of Table 3.12-2 when averaged over any calendar quarter, in lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report that identifies the cause(s) for exceeding the limit(s) and defines the corrective actions to be taken to reduce radioactive effluents so that the potential annual dose* to A MEMBER OF THE PUBLIC is less than the calendar year limits of Specification 3.11.1.2, 3.11.2.2, and 3.11.2.3. When more than one of the radionuclides in Table 3.12-2 are detected in the sampling medium, this report shall be submitted if:

$$\frac{\text{concentration (1)}}{\text{reporting level (1)}} + \frac{\text{concentration (2)}}{\text{reporting level (2)}} + \ldots \geq 1.0$$

When radionuclides other than those in Table 3.12-2 are detected and are the result of plant effluents, this report shall be submitted if the potential annual dose* to A MEMBER OF THE PUBLIC is equal to or greater than the calendar year limits of Specification 3.11.1.2, 3.11.2.2 and 3.11.2.3. This report is not required if the measured level of radioactivity was not the result of plant effluents; however, in such an event, the condition shall be reported and described in the Annual Radiological Environmental Operating Report.

*The methodology and parameters used to estimate the potential annual dose to a MEMBER OF THE PUBLIC shall be indicated in this report.

c. With fresh broad leaf vegetable samples or fleshy vegetable samples unavailable from one or more of the sample locations required by Table 3.12-1, identify locations for obtaining replacement samples and add them to the radiological environmental monitoring program within 30 days. The specific locations from which samples were unavailable may then be deleted from the monitoring program. In lieu of any other report required by Specification 6.9.1, identify the cause of the unavailability of samples and identify the new location(s) for obtaining replacement samples in the next Annual Radiological Environmental Operating Report.

d. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.12.1 The radiological environmental monitoring samples shall be collected pursuant to Table 3.12-1 from the locations given in the table and from figures in the ODCM and shall be analyzed pursuant to the requirements of Table 3.12-1 and the detection capabilities of Table 4.12-1.

TABLE 3.12-1

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

Exposure Pathway and/or Sample	Number of Samples and Sample Locations[a]	Sampling and Collection Frequency[a]	Type and Frequency of Analyses
1. AIRBORNE Radioiodine and Particulates	Samples from at least 5 locations 3 samples from offsite locations (in different sectors) of the highest calculated annual average groundlevel D/Q. 1 sample from the vicinity of a community having the highest calculated annual average groundlevel D/Q. 1 sample from a control location 15-30 km (10-20 miles) distant and in the least prevalent wind direction[c]	Continuous operof sampler with sample collection as required by dust loading but at least once per 7 days.[d]	Radioiodine cartridge. Analyze at least once per 7 days for I-131. Particulate sampler. Analyze for gross beta radioactivity ≥ 24 hours following filter change. Perform gamma isotopic[b] analysis on each sample when gross beta activity is > 10 times the yearly mean of control samples. Perform gamma isotopic analysis on composite (by location) sample at least once per 92 days.
2. DIRECT RADIATION[e]	At least 30 locations including an inner ring of stations in the general area of the site boundary and an outer ring approximately in the 4 to 5 mile range from the site with a station in each sector of each ring. The balance of the stations are in special interest areas such as population centers, nearby residences, schools, and in 2 or 3 areas to serve as control stations.	At least once per 92 days.	Gamma dose. At least once per 92 days.

TABLE 3.12-1 (Continued)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

Exposure Pathway and/or Sample	Number of Samples and Sample Locations[a]	Sampling and Collection Frequency[a]	Type and Frequency of Analyses
3. WATERBORNE			
a. Ocean	4 Locations	At least once per month and composited quarterly	Gamma isotopic analysis of each monthly sample. Tritium analysis of composite sample at least once per 92 days.
b. Deleted			
c. Sediment from Shoreline	4 Locations	At least once per 184 days.	Gamma isotopic analysis of each sample.
d. Ocean Bottom Sediments	5 Locations	At least once per 184 days.	Gamma isotopic analysis of each sample.

TABLE 3.12-1 (Continued)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

Exposure Pathway and/or Sample	Number of Samples and Sample Locations[a]	Sampling and Collection Frequency[a]	Type and Frequency of Analyses
4. INGESTION			
a. Nonmigratory Marine Animals	3 Locations	One sample in season, or at least once per 184 days if not seasonal. One sample of each of the following species: 1. Fish-2 adult species such as perch or sheepshead. 2. Crustaceae-such as crab or lobster. 3. Mollusks-such as limpets or seahares.	Gamma isotopic analysis on edible portions.
b. Local Crops	2 Locations	Representative vegetables, normally 1 broadleaf and 1 fleshy collected at harvest time. At least 2 vegetables collected semiannually from each location.	Gamma isotopic analysis on edible portions semiannually and I-131 analysis for leafy crops.

TABLE NOTATION

a. Sample locations are indicated in the ODCM

b. Gamma isotopic analysis means the identification and quantification of gamma-emitting radionuclides that may be attributable to the effluents from the facility.

c. The purpose of this sample is to obtain background information. If it is not practical to establish control locations in accordance with the distance and wind direction criteria, other sites which provide valid background data may be substituted.

d. Canisters for the collection of radioiodine in air are subject to channeling. These devices should be carefully checked before operation in the field or several should be mounted in series to prevent loss of iodine.

e. Regulatory Guide 4.13 provides minimum acceptable performance criteria for thermoluminescence dosimetry (TLD) systems used for environmental monitoring. One or more instruments, such as a pressurized ion chamber, for measuring and recording dose rate continuously may be used in place of, or in addition to, integrating dosimeters. For the purposed of this table, a thermoluminescent dosimeter may be considered to be one phosphor and two or more phosphors in a packet may be considered as two or more dosimeters. Film badges should not be used for measuring direct radiation.

TABLE 3.12-2

REPORTING LEVELS FOR RADIOACTIVITY CONCENTRATIONS IN ENVIRONMENTAL SAMPLES

Reporting Levels

Analysis	Water (pCi/l)	Airborne Particulate or Gases (pCi/m^3)	Marine Animals (pCi/Kg, wet)	Local Crops (pCi/Kg, wet)
H-3	2×10^4(a)			
Mn-54	1×10^3		3×10^4	
Fe-59	4×10^2		1×10^4	
Co-58	1×10^3		3×10^4	
Co-60	3×10^2		1×10^4	
Zn-65	3×10^2		2×10^4	
Zr-Nb-95	4×10^2			
I-131	2	0.9		1×10^2
Cs-134	30	10	1×10^3	1×10^3
Cs-137	50	20	2×10^3	2×10^3
Ba-La-140	2×10^2			

(a) For drinking water samples. This is 40 CFR Part 141 value.

TABLE 4.12-1

MAXIMUM VALUES FOR THE LOWER LIMITS OF DETECTION (LLD)[a,c]

Analysis	Water (pCi/l)	Airborne Particulate or Gas (pCi/m^3)	Marine Animals (pCi/kg, wet)	Local Crops (pCi/kg, wet)	Sediment (pCi/kg, dry)
gross beta	4	1×10^{-2}			
H-3	2000				
Mn-54	15		130		
Fe-59	30		260		
Co-58, 60	15		130		
Zn-65	30		260		
Zr-95	30				
Nb-95	15				
I-131	1	7×10^{-2}		60	
Cs-134	15	5×10^{-2}	130	60	150
Cs-137	18	6×10^{-2}	150	80	180
Ba-140	60				
La-140	15				

TABLE 4.12-1 (Continued)

TABLE NOTATION

a. The LLD is defined, for purposes of these specifications, as the smallest concentration of radioactive material in a sample that will yield a net count, above system background, that will be detected with 95% probability with only 5% probability of falsely concluding that a blank observation represents a "real" signal.

For a particular measurement system (which may include radiochemical separation):

$$LLD = \frac{4.66\ s_b}{E \cdot V \cdot 2.22 \cdot Y \cdot \exp(-\lambda \Delta t)}$$

Where:

LLD is the "a priori" lower limit of detection as defined above (as picocurie per unit mass or volume),

s_b is the standard deviation of the background counting rate or of the counting rate of a blank sample as appropriate (as counts per minute),

E is the counting efficiency (as counts per transformation),

V is the sample size (in units of mass or volume),

2.22 is the number of transformation per minute per picocurie,

Y is the fractional radiochemical yield (when applicable),

λ is the radioactive decay constant for the particular radionuclide, and

Δt is the elapsed time between sample collection (or end of the sample collection period) and time of counting (for environmental samples, not plant effluent samples).

Typical values of E, V, Y and Δt shall be used in the calculations.

TABLE 4.12-1 (Continued)

TABLE NOTATION

It should be recognized that the LLD is defined as an a priori (before the fact) limit representing the capability of a measurement system and not as an a posteriori (after the fact) limit for a particular measurement. Analyses shall be performed in such a manner that the stated LLDs will be achieved under routine conditions. Occasionally background fluctuations, unavoidable small sample sizes, the presence of interfering nuclides, or other uncontrollable circumstances may render these LLDs unachievable. In such cases, the contributing factors shall be identified and described in the Annual Radiological Environmental Operating Report pursuant to Specification 6.9.1.6.

b. Deleted.

c. Other peaks which are measureable and identifiable, together with the radionuclides in Table 4.12-1, shall be identified and reported.

RADIOACTIVE EFFLUENTS

3/4 12.2 LAND USE CENSUS

LIMITING CONDITION FOR OPERATION

3.12.2 A land use census shall be conducted and shall identify the location of the nearest milk animal, the nearest residence and the nearest garden* of greater than 500 square feet producing fresh broadleaf vegetables in each of the 16 meteorological sectors within a distance of five miles. For elevated releases as defined in Regulatory Guide 1.111, Revision 1, July 1977, the land use census shall also identify the locations of all milk animals and all gardens of greater than 500 square feet producing fresh broadleaf vegetables in each of the 16 meteorological sectors within the distance of three miles.

APPLICABILITY: At all times.

ACTION:

a. With a land use census identifying a location(s) which yields a calculated dose or dose commitment greater than the values currently being calculated in Specification 4.11.2.3, in lieu of any other report required by Specification 6.9.1, identify the new locations in the next Annual Radiological Environmental Operating Report pursuant to Specification 6.9.1.6.

b. With a land use census identifying a location(s) which yields a calculated dose or dose commitment via the same exposure pathway 20 percent greater than at a location from which samples are currently being obtained in accordance with Specification 3.12.1, in lieu of any other report required by Specification 6.9.1, identify the new location(s) in the next Annual Radiological Environmental Operating Report pursuant to Specification 6.9.1.8.

   The new location shall be added to the radiological environmental monitoring program within 30 days. The sampling location, excluding the control station location, having the lowest calculated dose or dose commitment via the same exposure pathway may be deleted from this monitoring program after October 31, of the year in which this land use census was conducted.

c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.12.2 The land use census shall be conducted at least once per 12 months using that information which will provide the best results, such as by a door-to-door survey, aerial survey, or by consulting local agriculture authorities. The results of the land use census shall be included in the Annual Radiological Environmental Operating Report pursuant to Specification 6.9.1.6.

*Broadleaf vegetation sampling may be performed at the site boundary in the direction sector with the highest D/Q in lieu of the garden census.

3/4 12.3 INTERLABORATORY COMPARISON PROGRAM

LIMITING CONDITION FOR OPERATION

3.12.3 Analyses shall be performed on radioactive materials supplied as part of an Interlaboratory Comparison Program which has been approved by the Commission.

APPLICABILITY: At all times.

ACTION:

a. With analyses not being performed as required above, report the corrective actions taken to prevent a recurrence to the Commission in the Annual Radiological Environmental Operating Report.

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.12.3 A summary of the results obtained as part of the above required Interloboratory Comparison Program shall be included in the Annual Radiological Environmental Operating Report.

TABLE 4.11-2 (Continued)

TABLE NOTATION

b. Analyses shall also be performed following shutdown, startup, or a THERMAL POWER change exceeding 15 percent of the RATED THERMAL POWER within a one hour period.

c. Tritium grab samples shall be taken at least once per 24 hours when the refueling canal is flooded.

d. Samples shall be changed at least once per 7 days and analyses shall be completed within 48 hours after changing (or after removal from sampler). Sampling shall also be performed at least once per 24 hours for at least 7 days following each shutdown, startup or THERMAL POWER change exceeding 15 percent of RATED THERMAL POWER in one hour and analyses shall be completed within 48 hours of changing. When samples collected for 24 hours are analyzed, the corresponding LLD's may be increased by a factor of 10.

e. Tritium grab samples shall be taken at least once per 7 days from the ventilation exhaust from the spent fuel pool area, whenever spent fuel is in the spent fuel pool.

f. The ratio of the sample flow rate to the sampled stream flow rate shall be known for the time period covered by each dose or dose rate calculation made in accordance with Specifications 3.11.2.1, 3.11.2.2 and 3.11.2.3.

g. The principal gamma emitters for which the LLD specification applies exclusively are the following radionuclides: Kr-87, Kr-88, Xe-133, Xe-133m, Xe-135, and Xe-138 for gaseous emissions and Mn-54, Fe-59, Co-58, Co-60, Zn-65, Mo-99, Cs-134, Cs-137, Ce-141 and Ce-144 for particulate emissions. This list does not mean that only these nuclides are to be detected and reported. Other peaks which are measureable and identifiable, together with the above nuclides, shall also be identified and reported.

RADIOACTIVE EFFLUENTS

DOSE - NOBLE GASES

LIMITING CONDITION FOR OPERATION

3.11.2.2 The air dose due to noble gases released in gaseous effluents, from each reactor unit, from the site (see Figure 5.1-3) shall be limited to the following:

a. During any calendar quarter: Less than or equal to 5 mrad for gamma radiation and less than or equal to 10 mrad for beta radiation and,

b. During any calendar year: Less than or equal to 10 mrad for gamma radiation and less than or equal to 20 mrad for beta radiation.

APPLICABILITY: At all times.

ACTION

a. With the calculated air dose from radioactive noble gases in gaseous effluents exceeding any of the above limits, in lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report which identifies the cause(s) for exceeding the limit(s) and defines the corrective actions taken to reduce releases and the proposed corrective actions to be taken to assure that subsequent releases will be in compliance with Specification 3.11.2.2.

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.2 Dose Calculations Cumulative dose contributions for the current calendar quarter and current calendar year shall be determined in accordance with the ODCM at least once per 31 days.

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RADIOACTIVE EFFLUENTS

DOSE - RADIOIODINES, RADIOACTIVE MATERIALS IN PARTICULATE FORM AND TRITIUM

LIMITING CONDITION FOR OPERATION

3.11.2.3 The dose to an individual from tritium, radioiodines and radioactive materials in particulate form with half-lives greater than 8 days in gaseous effluents released, from each reactor unit, from the site (see Figure 5.1-3) shall be limited to the following:

a. During any calendar quarter: Less than or equal to 7.5 mrem to any organ and,

b. During any calendar year: Less than or equal to 15 mrem to any organ.

APPLICABILITY: At all times.

ACTION:

a. With the calculated dose from the release of tritium, radioiodines, and radioactive materials in particulate form, with half lives greater than 8 days, in gaseous effluents exceeding any of the above limits, in lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report which identifies the cause(s) for exceeding the limit and defines the corrective actions taken to reduce releases and the proposed actions to be taken to assure that subsequent releases will be in compliance with Specification 3.11.2.3.

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.3 Dose Calculations Cumulative dose contributions for the current calendar quarter and current calendar year shall be determined in accordance with the ODCM at least once per 31 days.

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RADIOACTIVE EFFLUENTS

GASEOUS RADWASTE TREATMENT

LIMITING CONDITION FOR OPERATION

3.11.2.4 The GASEOUS RADWASTE TREATMENT SYSTEM and the VENTILATION EXHAUST TREATMENT SYSTEM shall be OPERABLE. The appropriate portions of the GASEOUS RADWASTE TREATMENT SYSTEM shall be used to reduce radioactive materials in gaseous waste prior to their discharge when the projected gaseous effluent air doses due to gaseous effluent releases from the site (see Figure 5.1-3), when averaged over 31 days, would exceed 0.2 mrad for gamma radiation and 0.4 mrad for beta radiation. The appropriate portions of the VENTILATION EXHAUST TREATMENT SYSTEM shall be used to reduce radioactive materials in gaseous waste prior to their discharge when the projected doses due to gaseous effluent releases from the site (see Figure 5.1-3) when averaged over 31 days would exceed 0.3 mrem to any organ.*

APPLICABILITY: At all times.

ACTION:

a. With the GASEOUS RADWASTE TREATMENT SYSTEM and/or the VENTILATION EXHAUST TREATMENT SYSTEM inoperable for more than 31 days or with gaseous waste being discharged without treatment and in excess of the above limits, in lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report which includes the following information:

   1. Identification of the inoperable equipment or subsystems and the reason for inoperability,

   2. Action(s) taken to restore the inoperable equipment to OPERABLE status, and

   3. Summary description of action(s) taken to prevent a recurrence.

b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.4.1 Doses due to gaseous releases from the site shall be projected at least once per 31 days, in accordance with the ODCM.

4.11.2.4.2 The GASEOUS RADWASTE TREATMENT SYSTEM and VENTILATION EXHAUST TREATMENT SYSTEM shall be demonstrated OPERABLE by operating the GASEOUS RADWASTE TREATMENT SYSTEM equipment and VENTILATION EXHAUST TREATMENT SYSTEM equipment for at least 15 minutes, at least once per 92 days unless the appropriate system has been utilized to process radioactive gaseous effluents during the previous 92 days.

*These doses are per reactor unit.

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DESCRIPTION OF PROPOSED CHANGES
NPF-10-131 AND NPF-15-131 AND
SAFETY ANALYSIS

This is a request to revise Technical Specification 3/4.3.3.8, RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION.

Existing Specifications

Unit 2: See Attachment A
Unit 3: See Attachment C

Proposed Specifications

Unit 2: See Attachment B
Unit 3: See Attachment D

Description

The proposed change is required to clarify technical specification requirements for radioactive effluent monitoring instrumentation. The proposed change implements editorial changes from NUREG 0472, Draft Revision 3, "Standard Radiological Effluent Technical Specifications for Pressurized Water Reactors - September 1982," improves consistency within the ACTION statements, and allows the use of pumps other than the circulating water pumps to provide dilution to meet the site radioactive effluent concentration limits.

The following changes are made to Specification 3/4.3.3.8:

1. Surveillance Requirement 4.3.3.8.2 is revised to allow the use of any pumps capable of providing adequate dilution in lieu of only the circulating water pumps. The saltwater cooling pumps which provide cooling water to the component cooling water system heat exchangers are also capable of providing dilution for radioactive liquid effluents. The existing surveillance requirement does not specifically allow this.

2. ACTIONs 28, 29, 30, and 31 of Table 3.3-12 are revised to be consistent with the general ACTIONs of Specification 3.3.3.8. The existing ACTIONs 28 through 31 have time limits associated with their compensatory measures. However, the provisions of Specifications 3.0.3, 3.0.4 and 6.9.1.13b are exempted by general ACTION 'a'. This is inconsistent with the time limits on the individual ACTION since no additional action is required. The time limits are therefore deleted.

However, SCE fully intends to maintain radioactive effluent monitoring instrumentation in a high state of availability and considers that the burden of compliance with the ACTION requirements provides sufficient encouragement to restore inoperable instruments to operable status in a timely fashion. It is in SCE's best interests to do so. However, there may be circumstances where it may not be possible to restore an inoperable channel to operable status within 30 days.

In the event an instrument remains inoperable for greater than thirty days, the reasons why it was not restored in a timely manner will continue to be reported in the Semiannual Radioactive Effluent Release Report as required by general ACTION "b". General ACTION "b" is revised to clarify this requirement.

3. The statement "Otherwise suspend release of radioactive effluents via this pathway" is deleted from ACTION 28 to make it consistent with the other liquid effluent monitoring ACTIONs. This requirement is implicit with failure to meet any liquid effluent monitoring LCO and ACTION. Calling it out specifically for ACTION 28 only confuses the action to be taken when other liquid effluent monitoring LCO's and ACTIONs are not met.

4. ACTIONs 29 and 30 are modified to add additional flexibility provided by the design of the plants. Rather than meeting the existing ACTION requirements and continue releases via the affected pathway, the revised ACTIONs would permit isolation of the pathway and diversion of the effluent to the liquid radwaste treatment system for processing as liquid radwaste. This will allow continued operation of the affected system while still meeting liquid effluent monitoring requirements.

SAFETY ANALYSIS

The proposed change discussed above shall be deemed to involve a significant hazards consideration if there is a positive finding in any one of the following areas:

1. Will operation of the facility in accordance with this proposed change involve a significant increase in the probability or consequence of any accident previously evaluated.

   Response: No

   The proposed change clarifies the requirements for radioactive liquid effluent instrumentation. Item 3 of the proposed change allows the use of pumps other than the circulating water pumps for effluent dilution. This change does not affect the allowable effluent concentration limits. It merely allows the use of other means of providing dilution when required.

   Item 4 of the proposed change recognizes in the liquid effluent monitoring ACTION statements additional flexibility provided by the design of the plant. It does not affect the allowable effluent concentration limits.

The proposed change relates only to radioactive liquid effluent monitoring instrumentation which is not credited in any previously evaluated accident. Therefore, the proposed change does not increase the probability or consequences of any previously evaluated accident.

2. Will operation of the facility in accordance with this proposed change create the possibility or a new or different kind of accident from any accident previously evaluated?

   Response: No

   The proposed change does not alter the configuration of the plant or its operation. The provisions to allow the use of pumps other than the circulating water pumps for effluent dilution and the additional exceptions for ACTIONs 29 and 30 will allow use of existing design features. Therefore, the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Will operation of the facility in accordance with the proposed change involve a significant reduction in a margin of safety?

   Response: No

   The proposed change is essentially editorial in nature and does not affect any effluent release limit. The additional flexibility provided by the proposed change takes advantage of existing design features. No functional requirements are reduced by the proposed change. Therefore, no margin of safety is reduced.

The proposed revision of radioactive liquid effluent monitoring instrumentation requirements is similar to example (i) of amendments not likely to involve a significant hazards consideration published in 48 FR 14864, dated April 6, 1983, in that it is essentially administrative in nature.

SAFETY AND SIGNIFICANT HAZARDS DETERMINATION

Based on the above Safety Analysis, it is concluded that: (1) the proposed change does not constitute a significant hazards consideration as defined by 10 CFR 50.92; and (2) there is reasonable assurance that the health and safety of the public will not be endangered by the proposed change; and (3) this action will not result in a condition which significantly alters the impact of the station on the environment as described in the NRC Final Environmental Statement.

PSmith:0243F

ATTACHMENT A

RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.8 The radioactive liquid effluent monitoring instrumentation channels shown in Table 3.3-12 shall be OPERABLE with their alarm/trip setpoints set to ensure that the limits of Specification 3.11.1.1 are not exceeded. The alarm/trip setpoints of these channels shall be determined in accordance with the OFFSITE DOSE CALCULATION MANUAL (ODCM).

APPLICABILITY: At all times.*

ACTION:

a. With a radioactive liquid effluent monitoring instrumentation channel alarm/trip setpoint less conservative than required by the above specification, immediately suspend the release of radioactive liquid effluents monitored by the affected channel or declare the channel inoperable.

b. With less than the minimum number of radioactive liquid effluent monitoring instrumentation channels OPERABLE, take the ACTION shown in Table 3.3-12. Additionally, if the inoperable instruments are not returned to OPERABLE status within 30 days, explain in the next Semi-annual Radioactive Effluent Release Report why the inoperability was not corrected in a timely manner.

c. The provisions of Specifications 3.0.3, 3.0.4, and 6.9.1.13b are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.8.1 Each radioactive liquid effluent monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK, SOURCE CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST operations at the frequencies shown in Table 4.3-8.

4.3.3.8.2 At least once per 4 hours at least one circulating water pump shall be determined to be operating and providing dilution to the discharge structure whenever dilution is required to meet the site radioactive effluent concentration limits of Specification 3.11.1.1.

*See Special Test Exception 3.10.5.

TABLE 3.3-12

RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION

	INSTRUMENT	MINIMUM CHANNELS OPERABLE	ACTION
1.	GROSS RADIOACTIVITY MONITORS PROVIDING ALARM AND AUTOMATIC TERMINATION OF RELEASE		
	a. Liquid Radwaste Effluent Line - 2/3 RT - 7813	1	28
	b. Steam Generator Blowdown (Neutralization Sump) Effluent Line - 2 RT - 7817	1	29
	c. Turbine Building Sumps Effluent Line - 2 RT - 7821	1	30
	d. Steam Generator (E088) Blowdown Bypass Effluent Line - 2RT6759	1	29
	e. Steam Generator (E089) Blowdown Bypass Effluent Line - 2RT6753	1	29
2.	FLOW RATE MEASUREMENT DEVICES		
	a. Liquid Radwaste Effluent Line	1	31
	b. Steam Generator Blowdown (Neutralization Sump) Effluent Line	1	31
	c. Steam Generator (E088) Blowdown Bypass Effluent Line	1	31
	d. Steam Generator (E089) Blowdown Bypass Effluent Line	1	31

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AMENDMENT NO. 19

TABLE 3.3-12 (Continued)

TABLE NOTATION

ACTION 28 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases may continue for up to 14 days provided that prior to initiating a release:

a. At least two independent samples are analyzed in accordance with Specification 4.11.1.1.3, and

b. At least two technically qualified members of the Facility Staff independently verify the release rate calculations and discharge line valving;

Otherwise, suspend release of radioactive effluents via this pathway.

ACTION 29 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue for up to 30 days provided grab samples are analyzed for gross radioactivity (beta or gamma) at a limit of detection of at least 10^{-7} microcuries/gram:

a. At least once per 8 hours when the specific activity of the secondary coolant is greater than 0.01 microcuries/gram DOSE EQUIVALENT I-131.

b. At least once per 24 hours when the specific activity of the secondary coolant is less than or equal to 0.01 microcuries/gram DOSE EQUIVALENT I-131.

ACTION 30 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue for up to 30 days provided that, at least once per 8 hours, grab samples are collected and analyzed for gross radioactivity (beta or gamma) at a limit of detection of at least 10^{-7} microcuries/ml.

ACTION 31 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue for up to 30 days provided the flow rate is estimated at least once per 4 hours during actual releases. Pump curves may be used to estimate flow.

TABLE 4.3-8

RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	SOURCE CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST
1. GROSS BETA OR GAMMA RADIOACTIVITY MONITORS PROVIDING ALARM AND AUTOMATIC TERMINATION OF RELEASE				
a. Liquid Radwaste Effluents Line - 2/3 RT - 7813	D	P	R(2)	Q(1)
b. Steam Generator Blowdown (Neutralization Sump) Effluent Line - 2RT - 7817	D	M	R(2)	Q(1)
c. Turbine Building Sumps Effluent Line - 2RT - 7821	D	M	R(2)	Q(1)
d. Steam Generator (E088) Blowdown Bypass Effluent Line - 2RT6759	D	M	R(2)	Q(1)
e. Steam Generator (E089) Blowdown Bypass Effluent Line - 2RT6753	D	M	R(2)	Q(1)
2. FLOW RATE MEASUREMENT DEVICES				
a. Liquid Radwaste Effluent Line	D(3)	N.A.	R	Q
b. Steam Generator Blowdown (Neutralization Sump) Effluent Line	D(3)	N.A.	R	Q
c. Steam Generator (E088) Blowdown Bypass Effluent Line	D(3)	N.A.	R	Q
d. Steam Generator (E089) Blowdown Bypass Effluent Line	D(3)	N.A.	R	Q

TABLE 4.3-8 (Continued)

TABLE NOTATION

(1) The CHANNEL FUNCTIONAL TEST shall also demonstrate that automatic isolation of this pathway and control room alarm annunciation occurs if any of the following conditions exists:*

1. Instrument indicates measured levels above the alarm/trip setpoint.

2. Circuit failure.

3. Instrument indicates a downscale failure.

(2) The initial CHANNEL CALIBRATION shall be performed using one or more of the reference standards certified by the National Bureau of Standards or using standards that have been obtained from suppliers that participate in measurement assurance activities with NBS. These standards shall permit calibrating the system over its intended range of energy and measurement range. For subsequent CHANNEL CALIBRATION, sources that have been related to the initial calibration shall be used.

(3) CHANNEL CHECK shall consist of verifying indication of flow during periods of release. CHANNEL CHECK shall be made at least once per 24 hours on days on which continuous, periodic, or batch releases are made.

*If the instrument controls are not in the operate mode, procedures shall require that the channel be declared inoperable.

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ATTACHMENT B

INSTRUMENTATION

RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.8 The radioactive liquid effluent monitoring instrumentation channels shown in Table 3.3-12 shall be OPERABLE with their alarm/trip setpoints set to ensure that the limits of Specification 3.11.1.1 are not exceeded. The alarm/trip setpoints of these channels shall be determined in accordance with the OFFSITE DOSE CALCULATION MANUAL (ODCM).

APPLICABILITY: At all times.*

ACTION:

a. With a radioactive liquid effluent monitoring instrumentation channel alarm/trip setpoint less conservative than required by the above specification, immediately suspend the release of radioactive liquid effluents monitored by the affected channel or declare the channel inoperable.

b. With less than the minimum number of radioactive liquid effluent monitoring instrumentation channels OPERABLE, take the ACTION shown in Table 3.3-12. Additionally, if the inoperable instrument(s) remain inoperable for greater than 30 days, explain in the next Semi-annual Radioactive Effluent Release Report why the inoperability was not corrected in a timely manner.

c. The provisions of Specifications 3.0.3, 3.0.4, and 6.9.1.13b are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.8.1 Each radioactive liquid effluent monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK, SOURCE CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST operations at the frequencies shown in Table 4.3-8.

4.3.3.8.2 At least once per 4 hours, all pumps required to be providing dilution to meet the site radioactive effluent concentration limits of specification 3.11.1.1 shall be determined to be operating and providing dilution to the discharge structure.

*See Special Test Exception 3.10.5.

TABLE 3.3-12

RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION

	INSTRUMENT	MINIMUM CHANNELS OPERABLE	ACTION
1.	GROSS RADIOACTIVITY MONITORS PROVIDING ALARM AND AUTOMATIC TERMINATION OF RELEASE		
	a. Liquid Radwaste Effluent Line - 2/3 RT - 7813	1	28
	b. Steam Generator Blowdown (Neutralization Sump) Effluent Line - 2 RT - 7817	1	29
	c. Turbine Building Sumps Effluent Line - 2 RT - 7821	1	30
	d. Steam Generator (E088) Blowdown Bypass Effluent Line - 2RT6759	1	29
	e. Steam Generator (E089) Blowdown Bypass Effluent Line - 2RT6753	1	29
2.	FLOW RATE MEASUREMENT DEVICES		
	a. Liquid Radwaste Effluent Line	1	31
	b. Steam Generator Blowdown (Neutralization Sump) Effluent Line	1	31
	c. Steam Generator (E088) Blowdown Bypass Effluent Line	1	31
	d. Steam Generator (E089) Blowdown Bypass Effluent Line	1	31

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TABLE 3.3-12 (Continued)

TABLE NOTATION

ACTION 28 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases may continue provided that prior to initiating a release:

a. At least two independent samples are analyzed in accordance with Specification 4.11.1.1.3, and

b. At least two technically qualified members of the Facility Staff independently verify the release rate calculations and discharge line valving;

ACTION 29 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided grab samples are analyzed for gross radioactivity (beta or gamma) at a limit of detection of at least 10^{-7} microcuries/gram:

a. At least once per 8 hours when the specific activity of the secondary coolant is greater than 0.01 microcuries/gram DOSE EQUIVALENT I-131.

b. At least once per 24 hours when the specific activity of the secondary coolant is less than or equal to 0.01 microcuries/gram DOSE EQUIVALENT I-131 OR

C. Lock closed valve HV-3773 and divert flow to T-064 for processing as liquid radwaste.

ACTION 30 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided that, at least once per 8 hours, grab samples are collected and analyzed for gross radioactivity (beta or gamma) at a limit of detection of at least 10^{-7} microcuries/ml or lock closed valve S22U19-MU077 or S22U19-MU078 and divert flow to the radwaste sump for processing as liquid radwaste.

ACTION 31 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided the flow rate is estimated at least once per 4 hours during actual releases. Pump curves may be used to estimate flow.

TABLE 4.3-8

RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	SOURCE CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST
1. GROSS BETA OR GAMMA RADIOACTIVITY MONITORS PROVIDING ALARM AND AUTOMATIC TERMINATION OF RELEASE				
a. Liquid Radwaste Effluents Line - 2/3 RT - 7813	D	P	R(2)	Q(1)
b. Steam Generator Blowdown (Neutralization Sump) Effluent Line - 2RT - 7817	D	M	R(2)	Q(1)
c. Turbine Building Sumps Effluent Line - 2RT - 7821	D	M	R(2)	Q(1)
d. Steam Generator (E088) Blowdown Bypass Effluent Line - 2RT6759	D	M	R(2)	Q(1)
e. Steam Generator (E089) Blowdown Bypass Effluent Line - 2RT6753	D	M	R(2)	Q(1)
2. FLOW RATE MEASUREMENT DEVICES				
a. Liquid Radwaste Effluent Line	D(3)	N.A.	R	Q
b. Steam Generator Blowdown (Neutralization Sump) Effluent Line	D(3)	N.A.	R	Q
c. Steam Generator (E088) Blowdown Bypass Effluent Line	D(3)	N.A.	R	Q
d. Steam Generator (E089) Blowdown Bypass Effluent Line	D(3)	N.A.	R	Q

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AMENDMENT NO. 19

TABLE 4.3-8 (Continued)

TABLE NOTATION

(1) The CHANNEL FUNCTIONAL TEST shall also demonstrate that automatic isolation of this pathway and control room alarm annunciation occurs if any of the following conditions exists:*

1. Instrument indicates measured levels above the alarm/trip setpoint.

2. Circuit failure.

3. Instrument indicates a downscale failure.

(2) The initial CHANNEL CALIBRATION shall be performed using one or more of the reference standards certified by the National Bureau of Standards or using standards that have been obtained from suppliers that participate in measurement assurance activities with NBS. These standards shall permit calibrating the system over its intended range of energy and measurement range. For subsequent CHANNEL CALIBRATION, sources that have been related to the initial calibration shall be used.

(3) CHANNEL CHECK shall consist of verifying indication of flow during periods of release. CHANNEL CHECK shall be made at least once per 24 hours on days on which continuous, periodic, or batch releases are made.

*If the instrument controls are not in the operate mode, procedures shall require that the channel be declared inoperable.

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ATTACHMENT C

INSTRUMENTATION

RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.8 The radioactive liquid effluent monitoring instrumentation channels shown in Table 3.3-12 shall be OPERABLE with their alarm/trip setpoints set to ensure that the limits of Specification 3.11.1.1 are not exceeded. The alarm/trip setpoints of these channels shall be determined in accordance with the OFFSITE DOSE CALCULATION MANUAL (ODCM).

APPLICABILITY: At all times.

ACTION:

a. With a radioactive liquid effluent monitoring instrumentation channel alarm/trip setpoint less conservative than required by the above specification, immediately suspend the release of radioactive liquid effluents monitored by the affected channel or declare the channel inoperable.

b. With less than the minimum number of radioactive liquid effluent monitoring instrumentation channels OPERABLE, take the ACTION shown in Table 3.3-12. Additionally, if the inoperable instruments are not returned to OPERABLE status within 30 days, explain in the next Semi-annual Radioactive Effluent Release Report why the inoperability was not corrected in a timely manner.

c. The provisions of Specifications 3.0.3, 3.0.4, and 6.9.1.13b are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.8.1 Each radioactive liquid effluent monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK, SOURCE CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST operations at the frequencies shown in Table 4.3-8.

4.3.3.8.2 At least once per 4 hours at least one circulating water pump shall be determined to be operating and providing dilution to the discharge structure whenever dilution is required to meet the site radioactive effluent concentration limits of Specification 3.11.1.1.

TABLE 3.3-12

RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE	ACTION
1. GROSS RADIOACTIVITY MONITORS PROVIDING ALARM AND AUTOMATIC TERMINATION OF RELEASE		
a. Liquid Radwaste Effluent Line - 2/3 RT - 7813	1	28
b. Steam Generator Blowdown (Neutralization Sump) Effluent Line - 3RT - 7817	1	29
c. Turbine Building Sumps Effluent Line - 3RT - 7821	1	30
d. Steam Generator (E088) Blowdown Bypass Effluent Line - 3RT6759	1	29
e. Steam Generator (E089) Blowdown Bypass Effluent Line - 3RT6753	1	29
2. FLOW RATE MEASUREMENT DEVICES		
a. Liquid Radwaste Effluent Line	1	31
b. Steam Generator Blowdown (Neutralization Sump) Effluent Line	1	31
c. Steam Generator (E088) Blowdown Bypass Effluent Line	1	31
d. Steam Generator (E089) Blowdown Bypass Effluent Line	1	31

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TABLE 3.3-12 (Continued)

TABLE NOTATION

ACTION 28 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases may continue for up to 14 days provided that prior to initiating a release:

a. At least two independent samples are analyzed in accordance with Specification 4.11.1.1.3, and

b. At least two technically qualified members of the Facility Staff independently verify the release rate calculations and discharge line valving;

Otherwise, suspend release of radioactive effluents via this pathway.

ACTION 29 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue for up to 30 days provided grab samples are analyzed for gross radioactivity (beta or gamma) at a limit of detection of at least 10^{-7} microcuries/gram:

a. At least once per 8 hours when the specific activity of the secondary coolant is greater than 0.01 microcuries/gram DOSE EQUIVALENT I-131.

b. At least once per 24 hours when the specific activity of the secondary coolant is less than or equal to 0.01 microcuries/gram DOSE EQUIVALENT I-131.

ACTION 30 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue for up to 30 days provided that, at least once per 8 hours, grab samples are collected and analyzed for gross radioactivity (beta or gamma) at a limit of detection of at least 10^{-7} microcuries/ml.

ACTION 31 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue for up to 30 days provided the flow rate is estimated at least once per 4 hours during actual releases. Pump curves may be used to estimate flow.

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TABLE 4.3-8

RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	SOURCE CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST
1. GROSS BETA OR GAMMA RADIOACTIVITY MONITORS PROVIDING ALARM AND AUTOMATIC TERMINATION OF RELEASE				
a. Liquid Radwaste Effluents Line - 2/3 RT - 7813	D	P	R(2)	Q(1)
b. Steam Generator Blowdown (Neutralization Sump) Effluent Line - 3RT - 7817	D	M	R(2)	Q(1)
c. Turbine Building Sumps Effluent Line - 3RT - 7821	D	M	R(2)	Q(1)
d. Steam Generator (E088) Blowdown Bypass Effluent Line - 3RT6759	D	M	R(2)	Q(1)
e. Steam Generator (E089) Blowdown Bypass Effluent Line - 3RT6753	D	M	R(2)	Q(1)
2. FLOW RATE MEASUREMENT DEVICES				
a. Liquid Radwaste Effluent Line	D(3)	N.A.	R	Q
b. Steam Generator Blowdown (Neutralization Sump) Effluent Line	D(3)	N.A.	R	Q
c. Steam Generator (E088) Blowdown Bypass Effluent Line	D(3)	N.A.	R	Q
d. Steam Generator (E089) Blowdown Bypass Effluent Line	D(3)	N.A.	R	Q

TABLE 4.3-8 (Continued)

TABLE NOTATION

(1) The CHANNEL FUNCTIONAL TEST shall also demonstrate that automatic isolation of this pathway and control room alarm annunciation occurs if any of the following conditions exists:*

1. Instrument indicates measured levels above the alarm/trip setpoint.

2. Circuit failure.

3. Instrument indicates a downscale failure.

(2) The initial CHANNEL CALIBRATION shall be performed using one or more of the reference standards certified by the National Bureau of Standards or using standards that have been obtained from suppliers that participate in measurement assurance activities with NBS. These standards shall permit calibrating the system over its intended range of energy and measurement range. For subsequent CHANNEL CALIBRATION, sources that have been related to the initial calibration shall be used.

(3) CHANNEL CHECK shall consist of verifying indication of flow during periods of release. CHANNEL CHECK shall be made at least once per 24 hours on days on which continuous, periodic, or batch releases are made.

*If the instrument controls are not in the operate mode, procedures shall require that the channel be declared inoperable.

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ATTACHMENT D

INSTRUMENTATION

RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.8 The radioactive liquid effluent monitoring instrumentation channels shown in Table 3.3-12 shall be OPERABLE with their alarm/trip setpoints set to ensure that the limits of Specification 3.11.1.1 are not exceeded. The alarm/trip setpoints of these channels shall be determined in accordance with the OFFSITE DOSE CALCULATION MANUAL (ODCM).

APPLICABILITY: At all times.

ACTION:

a. With a radioactive liquid effluent monitoring instrumentation channel alarm/trip setpoint less conservative than required by the above specification, immediately suspend the release of radioactive liquid effluents monitored by the affected channel or declare the channel inoperable.

b. With less than the minimum number of radioactive liquid effluent monitoring instrumentation channels OPERABLE, take the ACTION shown in Table 3.3-12. Additionally, if the inoperable instrument(s) remain inoperable for greater than 30 days, explain in the next Semi-annual Radioactive Effluent Release Report why the inoperability was not corrected in a timely manner.

c. The provisions of Specifications 3.0.3, 3.0.4, and 6.9.1.13b are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.8.1 Each radioactive liquid effluent monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK, SOURCE CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST operations at the frequencies shown in Table 4.3-8.

4.3.3.8.2 At least once per 4 hours, all pumps required to be providing dilution to meet the site radioactive effluent concentration limits of Specification 3.11.1.1 shall be determined to be operating and providing dilution to the discharge structure.

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TABLE 3.3-12

RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION

INSTRUMENT	MINIMUM CHANNELS OPERABLE	ACTION
1. GROSS RADIOACTIVITY MONITORS PROVIDING ALARM AND AUTOMATIC TERMINATION OF RELEASE		
a. Liquid Radwaste Effluent Line - 2/3 RT - 7813	1	28
b. Steam Generator Blowdown (Neutralization Sump) Effluent Line - 3RT - 7817	1	29
c. Turbine Building Sumps Effluent Line - 3RT - 7821	1	30
d. Steam Generator (E088) Blowdown Bypass Effluent Line - 3RT6759	1	29
e. Steam Generator (E089) Blowdown Bypass Effluent Line - 3RT6753	1	29
2. FLOW RATE MEASUREMENT DEVICES		
a. Liquid Radwaste Effluent Line	1	31
b. Steam Generator Blowdown (Neutralization Sump) Effluent Line	1	31
c. Steam Generator (E088) Blowdown Bypass Effluent Line	1	31
d. Steam Generator (E089) Blowdown Bypass Effluent Line	1	31

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TABLE 3.3-12 (Continued)

TABLE NOTATION

ACTION 28 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases may continue provided that prior to initiating a release:

a. At least two independent samples are analyzed in accordance with Specification 4.11.1.1.3, and

b. At least two technically qualified members of the Facility Staff independently verify the release rate calculations and discharge line valving;

ACTION 29 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided grab samples are analyzed for gross radioactivity (beta or gamma) at a limit of detection of at least 10^{-7} microcuries/gram:

a. At least once per 8 hours when the specific activity of the secondary coolant is greater than 0.01 microcuries/gram DOSE EQUIVALENT I-131.

b. At least once per 24 hours when the specific activity of the secondary coolant is less than or equal to 0.01 microcuries/gram DOSE EQUIVALENT I-131 OR

c. Lock closed valve HV-3773 and divert flow to T-064 for processing as liquid radwaste

ACTION 30 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided that, at least once per 8 hours, grab samples are collected and analyzed for gross radioactivity (beta or gamma) at a limit of detection of at least 10^{-7} microcuries/ml OR lock closed valve S22U19-MU077 or S22U19-MU078 and divert flow to the radwaste sump for processing as liquid radwaste.

ACTION 31 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided the flow rate is estimated at least once per 4 hours during actual releases. Pump curves may be used to estimate flow.

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TABLE 4.3-8

RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	SOURCE CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST
1. GROSS BETA OR GAMMA RADIOACTIVITY MONITORS PROVIDING ALARM AND AUTOMATIC TERMINATION OF RELEASE				
a. Liquid Radwaste Effluents Line - 2/3 RT - 7813	D	P	R(2)	Q(1)
b. Steam Generator Blowdown (Neutralization Sump) Effluent Line - 3RT - 7817	D	M	R(2)	Q(1)
c. Turbine Building Sumps Effluent Line - 3RT - 7821	D	M	R(2)	Q(1)
d. Steam Generator (E088) Blowdown Bypass Effluent Line - 3RT6759	D	M	R(2)	Q(1)
e. Steam Generator (E089) Blowdown Bypass Effluent Line - 3RT6753	D	M	R(2)	Q(1)
2. FLOW RATE MEASUREMENT DEVICES				
a. Liquid Radwaste Effluent Line	D(3)	N.A.	R	Q
b. Steam Generator Blowdown (Neutralization Sump) Effluent Line	D(3)	N.A.	R	Q
c. Steam Generator (E088) Blowdown Bypass Effluent Line	D(3)	N.A.	R	Q
d. Steam Generator (E089) Blowdown Bypass Effluent Line	D(3)	N.A.	R	Q

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TABLE 4.3-8 (Continued)

TABLE NOTATION

(1) The CHANNEL FUNCTIONAL TEST shall also demonstrate that automatic isolation of this pathway and control room alarm annunciation occurs if any of the following conditions exists:*

1. Instrument indicates measured levels above the alarm/trip setpoint.

2. Circuit failure.

3. Instrument indicates a downscale failure.

(2) The initial CHANNEL CALIBRATION shall be performed using one or more of the reference standards certified by the National Bureau of Standards or using standards that have been obtained from suppliers that participate in measurement assurance activities with NBS. These standards shall permit calibrating the system over its intended range of energy and measurement range. For subsequent CHANNEL CALIBRATION, sources that have been related to the initial calibration shall be used.

(3) CHANNEL CHECK shall consist of verifying indication of flow during periods of release. CHANNEL CHECK shall be made at least once per 24 hours on days on which continuous, periodic, or batch releases are made.

*If the instrument controls are not in the operate mode, procedures shall require that the channel be declared inoperable.

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